GLOBAL CORPORATE GOVERNANCE

Edited by Kose John,
Anil K. Makhija, Stephen P. Ferris

ADVANCES IN FINANCIAL ECONOMICS

VOLUME 19

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ADVANCES IN FINANCIAL ECONOMICS VOLUME 19

GLOBAL CORPORATE GOVERNANCE

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CONTENTS

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FINANCIAL PERFORMANCE AND THE COMPETITIVE EFFECTS OF CORPORATE SOCIAL RESPONSIBILITY

Vijay Gondhalekar and Kevin Lehnert

ABSTRACT

This study examines share price reaction to the enrollment by companies in the Children's Food and Beverage Advertising Initiative. We find that, on average, in the month of enrollment, shareholders of companies that join the CFBAI experience abnormal return of −3% and so do the shareholders of the immediate competitors that do not join the initiative. However, over the subsequent five years, while the shareholders of companies enrolled in the initiative experience an average abnormal return of +16.6%, that of non-enrolled competitors experience a further abnormal return of −34%. The abnormal returns for the two groups (at the time of enrollment and over the subsequent five years) are uncorrelated and so benefitting at the expense of competitors does not appear to be the motive for enrolling in the CFBAI. The study also provides comparison of number of employees

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and other important financial ratios before and after enrollment in the CFBAI for the two groups.

Keywords: CFBAI; social responsibility; food and beverage

JEL classifications: G1; H1; M3

INTRODUCTION

Given the obesity epidemic prevalent all over the world but especially in the developed countries, the Better Business Bureau Council and several leading US food and beverage companies formulated the Children's Food and Beverage Initiative (CFBAI) in November 2006.[1] The intention of this initiative is to encourage food and beverage companies to improve the nutrition profile of their products marketed to children under the age of 12 (cutting down on fat, sugar, sodium, etc., while improving the nutrition content of the product). Starting in 2007, 19 companies have voluntarily enrolled in the program (as of year-end 2015). The primary focus of our study is to examine the short- and long-term share price reaction to the enrollment in this initiative. The combined market value of equity of the 12 US publicly traded firms for the year-end 2006 is over $500 billion (GDP of 90% of countries is lower than this for 2006) and the impact of enrollment on the shareholders is likely to affect the long-term viability of this important initiative. Plus, this evidence would be useful guidance for shareholders of companies in other countries that are using the US initiative as a model (over 40 countries).

Joining the CFBAI is a signal by the company that it cares about the social responsibility arising from marketing products to kids. Prior research on Corporate Social Responsibility (CSR) has often focused on how consumers view the socially responsible marketing efforts (Barone, Miyazaki, & Taylor, 2000; Hoeffler & Keller, 2002; Lavack & Kropp, 2003; Luo & Bhattacharya, 2006; Nan & Heo, 2007; Yechiam, Barron, Erev, & Erez, 2002), or on how the initiative affects consumption (Atkinson, 2012; Cherry, Ellis, & DeSoucey, 2011; Hustad & Pessemier, 1973; Lichtenstein, Drumwright, & Braig, 2004). Overall, this evidence suggests that there is merit in firms supporting pro-social issues. Even from the financial perspective, meta-analysis of over 250 studies by Margolis, Elfenbein, and Walsh (2009) indicates that there is a small but positive relationship between

corporate social performance and financial performance. In other words, it pays to be good. The other side of this coin, however, has not received much empirical attention, that is, are competitors hurt when they do not or cannot join a socially responsible initiative? If the answer is yes then it raises the possibility that companies may use socially responsible initiatives as a front for actually hurting their competitors.

We examine the share price reaction of companies that join the CFBAI at the time of their enrollment and over the subsequent five years. For each publicly traded US company enrolled in the initiative we choose the closest competitor not enrolled in the program and we examine the enrollment and post-enrollment returns for this group as well. We examine correlations between the short- and long-term share price reactions across the matched groups for assessing whether (on average) returns to one group arises at the expense of the other. Lastly, we also examine changes in some of the important financial ratios of both the groups before and after enrollment. The idea is to shed light on possible motive/s behind enrollment in this socially responsible initiative. One obvious criticism of the study is that our sample consists of only 12 US publicly traded companies enrolled in the CFBAI (out of the total 19) and their 12 matched competitors. However, as mentioned previously, the companies enrolled in the CFBAI are huge (the combined revenue of the enrolled companies for year-end 2006 is over $175 billion) and so this initiative is likely to have significant impact on a vast number of kids. In order to allay the fears about drawing inferences based on small sample test statistics, we use bootstrap simulations for computing test statistics in addition to the traditional parametric and non-parametric tests for assessing the significance of stock returns.

Our findings indicate that companies enrolled in the CFBAI are substantially larger than their closest competitors that do not join the initiative (based on revenue, market value of equity, number of employees, etc.). Both groups experience an average abnormal decline in share price of about 3% in the month of enrollment. This translates into an average abnormal decline of $675 million for the enrolled group compared to a decline of $129 million for the non-enrolled group. Over the next five years, however, while the enrolled group experiences an average positive abnormal return of 16% the non-enrolled group experiences an average negative return of 34% translating into an average abnormal gain of $15.2 billion for the former group but an average abnormal loss of $1.6 billion for the latter. The abnormal returns at the time of enrollment and the abnormal returns over the subsequent five years show no correlation across the two groups of companies. Across the two groups, the abnormal returns at the

time of enrollment and the subsequent five-year abnormal returns exhibit no significant correlation. The evidence thus suggests that companies benefit when they enroll in the CFBAI but not at the expense of their competitors. Evidence from financial ratios also supports this view.

Discussions of motives for joining the CFBAI are given in the next section followed by details about the data and methodology. It is followed by the section "Findings" and our conclusions are in the final section.

MOTIVES FOR JOINING THE CHILDREN'S FOOD AND BEVERAGE INITIATIVE

Altruism

Given the growing obesity epidemic in the United States, companies that enroll in the initiative recognize that young minds may not be fully capable of making responsible dietary choices especially when advertising campaigns target such young minds. They recognize that the initiative will cause them to incur costs for strategic and operational changes needed in production, R&D, sales, marketing, etc., for offering nutritionally better foods and beverages marketed to young kids. They recognize the possibility that the competitor/s may not join them and so consumer tastes are unlikely to change and so enrollment would result in losing market share to the competitors, but they still decide to join the initiative because that is the right thing to do. This would result in reduced revenue and/or profitability if they join the CFBAI, but they still decide to do it purely out of altruism, that is, selfless concern for future generations.

If altruism is the primary motive of companies that enroll in the CFBAI, their expected share price reaction at the time of enrollment would be negative and that of the non-enrolled competitors would be non-negative (the non-enrolled companies must expect some benefit from not-joining or at least expect no cost being assessed on them from not-joining). If the equity market is efficient (i.e., the response to new information carries no systematic bias), the post-enrollment long-term share price reaction would be zero. It is likely that there may be uncertainty about the full impact of the initiative on the financial prospects when companies enroll in the program. The resolution of uncertainty would unfold subsequent to enrollment. However, if the equity market is efficient then the post-enrollment long-term returns would be unrelated to the returns at the time of enrollment

(for companies enrolled in the program and their non-enrolled competitors), that is, the reaction at the time of enrollment would exhibit no systematic bias about over/under estimation of the actual financial impact on the company. It is likely that non-enrolled competitors may be able to capture the market/consumers lost by those enrolled in the program and so the share price reactions of the companies enrolled in the program and their matched competitor would exhibit cross-sectional negative correlation.

Avoid Regulation

Given the obesity epidemic, it is likely that companies in the food and beverage business realize that regulators are likely to step in with restrictions on them. Companies may not have the well-being of their consumers at heart, but by joining the CFBAI they expect to stave off possible regulatory oversight. They are aware that joining the CFBAI would cut into their profit and would allow some of their competitors to free-ride without making any changes, but drawing the wrath of regulators would be even worse and so they join the initiative. The implications of this motive regarding the effect on revenue, profitability, short- and long-term share price reactions for enrollees and non-enrollees would be same as in "Altruism".

Feel Good Cosmetic Action

Companies may decide to join the CFBAI provided it is a net-zero game. The benefits could be in the form of improved image, no regulatory restrictions, etc., which would balance out any adverse effects arising from changes in advertising campaigns, personnel, production-mix, etc., and so companies enroll in the CFBAI if there is no net negative effect on their profitability. Competitors that do not enroll are aware that this initiative is simply a net-zero cosmetic action and so they do not bother to play the game. This motive implies that the short- and long-term share price reaction of enrollees and non-enrollees would be zero. The correlations across the share price reactions of the matched pairs of enrollees and non-enrollees would also be zero.

Hurt Competitors

Companies realize that joining the CFBAI may hurt them in the short run (because of having to make changes in production, marketing, R&D,

financing, personnel, etc.), but it provides strategic opportunity to hurt the competitors ill-positioned for enrolling in CFBAI even more. Furthermore, their advertising campaigns could not only burnish their own image but also implicitly/explicitly tarnish those that are not in a position to enroll in the program. Even if enrolling in the CFBAI may hurt revenue/profitability in the short term, it would weaken their competitors in the long run even more. This would improve their long-term profitability making it a positive net present value project.

This motive implies that the share price reaction would be positive at the time of enrollment for those that join the program and would be negative for their competitors that do not enroll in the initiative. The long-term post-enrollment reaction is expected to be zero for companies in both the groups (the capitalized value of long-term gains would be incorporated in the equity price at the time of enrollment). However, as indicated in "Altruism", there may be substantial uncertainty about the long-term gains/losses from joining or not-joining the CFBAI. The long-term share price reaction would incorporate the effect of uncertainty resolution, but if the market is efficient the long-term post-enrollment returns are not expected to exhibit systematic relationship with the returns at the time of enrollment for companies in both the groups. As the companies enrolled in the program are motivated by benefitting at the expense of their competitors, the share price reactions (short term and long term) across the matched pairs of companies are expected to be negative correlated.

This Social Responsibility Will also Force the Company to Be More Efficient and Resourceful

A possible motive for a company to enroll in the CFBAI could be the realization that they can proactively start to reformulate the food/beverage offerings and change their advertising campaigns to address the social issue of childhood obesity. Joining the initiative may be hard on the profitability in the short term, but it will force the company to develop competencies needed for a world that is increasingly emphasizing corporate social responsibility. Having to focus on the social bottom line (in addition to the profit bottom line) may be hard in the beginning, but it would force the company to become more thrifty, resourceful, agile, operationally efficient and/or innovative and so would be good even for the profit bottom line over the long haul.

This motive is different from "Hurt Competitors" because future gains arising from the alignment of financial and social bottom lines are expected to arise mainly from internal changes and not via hurting competitors. Also, uncertainty about the actual effect on the profit bottom line via internal changes is likely to be very high at the time of enrollment in the CFBAI (for insiders and outsiders, i.e., managers and shareholders). Therefore, the share price reaction at the time of enrollment could be negative if the market perceives the net gains from the changes (including the long-term prospects) to be negative or the reaction could be positive if the market assesses the net gains to be positive. The uncertainty about the net impact on the profit bottom line would be resolved as time unfolds and so the cumulative long-term reaction could be different from the reaction at the time of enrollment. Whatever the short-term and long-term reactions, if the market is efficient, the returns at the time of enrollment are not expected to exhibit a systematic relationship with the subsequent long-term returns because that would suggest systematic bias of over/under estimation of gains/losses by the market at the time of enrollment.

This motivation for enrollment provides no clear implications regarding the share price reaction of competitors that do not enroll in the program. On the one hand, companies that do not enroll in the CFBAI do not have to make any changes to their production, personnel, and marketing processes. Plus, they may be able to attract consumers who stick to prior preferences about foods and beverages even when nutritionally better choices become available and so may be able to grow their market share. Hence, the share price reaction could be positive if a company refrains from joining the CFBAI (when its competitor does). On the other hand, voluntary enrollment by companies in the CFBAI may be a sign of things to come and so all the companies in the industry could experience negative share price reaction in recognition of the impending change in consumer tastes and hence about the production and marketing changes that all of them may have to undergo sooner or later. Plus, not enrolling in the CFBAI may signal agency issues in the form of entrenchment and lack of desire to change on part of the management. The stock price reaction to non-enrollment could therefore be negative. Long-term share price reaction for companies that do not enroll in the initiative would depend on whether the CFBAI drives changes in consumer tastes and the actions that non-enrollees can take to stave off any ill impact on their profitability (e.g., via increased marketing efforts). In any case, as argued previously, if the market is efficient, the equity returns at the time of enrollment would not exhibit any systematic relationship with the subsequent long-term returns.

More importantly, since the gains to those enrolled in the program are expected to arise not at the expense of their non-enrolled competitors, the short-term as well as long-term stock returns of the two groups are not expected to exhibit an inverse relationship with each other.

Summary of the Above Motives.

Motive	Share Price Reaction of Enrolled Companies		Share price Reaction of Non-Enrolled Competitors		Correlation between
	At enrollment	Post enrollment	At enrollment	Post enrollment	Enrolled and non-enrolled
Altruism	Negative	Zero	Positive	Zero	Negative
Avoid regulation	Negative	Zero	Positive	Zero	Negative
Cosmetic action	Zero	Zero	Zero	Zero	Zero
Hurt competition	Positive	Zero	Negative	Zero	Negative
Improve efficiency	Positive/ Negative	Positive/ Negative	Positive/ Negative	Positive/ Negative	Zero

DATA AND METHODOLOGY

We use financial statement data gathered from the Standard and Poor's (S&P) Compustat and Net Advantage databases and we supplement these sources for any missing data by using the company websites wherever possible. For each publicly traded company enrolled in the CFBAI we identify the competitor closest in market value of equity by consulting the S&P Net Advantage database (they list all competitors of firms covered in their database) or we choose a company closest in market value of equity that has similar product lines listed by the S&P Compustat database. Thus, we form two matched portfolios of companies – those enrolled in the CFBAI and their closest competitors not enrolled in the CFBAI. We examine changes in some of the relevant financial ratios by comparing the five-year averages before and after enrollment (the year of enrollment is ignored).

For assessing the effect of enrollment on the shareholders of the above two groups of companies, we compute abnormal returns to the shareholders around the date of enrollment and over the five years after the date of enrollment. Share price data for this analysis is from the University of Chicago's Center for Research in Security Prices (CRSP) database.

Abnormal returns are computed based on the three-factor Fama-French (1993) model augmented with the momentum factor as in Carhart (1997). This model has become the gold standard for estimating abnormal returns in the mainstream finance area (overwhelming majority of event studies, such as ours, published in the leading finance journals use this model). As per this model, expected returns on a given stock for a given day (or month; we use monthly returns for computing long-term returns) is generated based on the following equation and then the difference between the realized return for that day (or month) and the expected return is taken as the abnormal return for that day (or month),

$$R_{jt} = a_j + B_{mj}(R_{mt}) + B_{sj}(\mathrm{SMB}_t) + B_{hj}(\mathrm{HML}_t) + B_{uj}(\mathrm{UMD}_t) + e_{jt}$$

Where subscript j stands for company j and t represents time, so R_{jt} represents return on the shares of company j at time t. R_{mt} is the return on the equity market at time t (the value-weighted CRSP index comprising all Nyse, Amex, and Nasdaq stocks is used as the market proxy). SMB_t stands for the return on small stocks minus the return on big stocks at time t, HML_t stands for the return on high book-to-market equity ratio stocks (value stocks) minus low book-to-market equity ratio stocks (growth stocks) at time t, UMD_t stands for the return on winner stocks (up stocks during the past year) minus the return on loser stocks (down stocks during the past year) at time t, and e_{jt} stands for the random error term in the return on stock j at time t. For more details about these factors and why they are included in assessing expected return for time t, we direct interested readers to Fama and French (1992, 1993, 1995, 1996, 2004) and Carhart (1997).

The parameters of the above model are estimated for each company by running ordinary least squares regressions. Expected returns are generated by using the estimated parameters and the realized values for the four factors (R_m, SMB, HML, and UMD). For computing abnormal returns (difference between realized and expected return) immediately surrounding the event of enrollment in the CFBAI we use daily returns and the parameters are computed based on daily data for the period (−280, −31) for each company (where day zero is the date of enrollment in CFBAI). For computing long-term abnormal returns over the five years after enrollment in the CFBAI we use monthly data and the parameters of the model are estimated using the monthly data for the period (−36, −1), where month zero stands for the month of enrollment.

Given that there are only 12 US publicly traded firms enrolled in the CFBAI (i.e., the sample size is 12 for the two group of firms), we use a battery of parametric (time-series and cross-sectional) and non-parametric tests for assessing the significance of abnormal returns. We even use a bootstrap method for generating significance test statistics based on an empirically generated distribution of abnormal returns (based on 10,000 random drawings). Lastly, for computing short- and long-term impact on the wealth of shareholders, we compute the average abnormal gains/losses to shareholders (in dollars rather than percentage abnormal returns). Here, we multiply the abnormal returns for a company by its market value of equity 30 days prior to the date of enrollment in the CFBAI and take the average across companies.

FINDINGS

Table 1 (Panel A) reports the names of companies enrolled in the CFBAI since its inception in 2007. The initiative started with 11 US companies enrolling in 2007 but the enrollment has increased by only eight as of December 2015 (four are non-US companies and three others are private companies). For details about the initiative and the annual progress reports on compliance by companies enrolled in the program please see the Council of Better Business Bureaus website https://www.bbb.org/council/the-national-partner-program/national-advertising-review-services/childrens-food-and-beverage-advertising-initiative/

As our Table 1 indicates, only 12 of the 19 companies are publicly traded in the United States. Data on the three private companies enrolled in the CFBAI is not available and shares prices of the four companies listed overseas are likely to be influenced by their country-specific factors and so we do not include them in our sample because this would muddy the picture given that the entire population itself is small. Each of the 12 US listed company is then matched with their closest competitor (based on the market value of equity prior to enrollment). Thus, we form two groups of 12 companies each – the group of companies enrolled in the CFBAI and the group of their closest competitors not enrolled in the initiative.

The purpose of Table 1 (Panel B) is to compare the two groups along some of the key dimensions (revenue, book value of assets, market value of equity, and number of employees) for understanding the possible differences in size and scope of operations of the two groups. What is immediately

Table 1. Companies Enrolled in the Children's Food and Beverage Advertising Initiative (CFBAI): 2007–2015.

Panel A: Enrolled Companies and their Competitors

	Name of Company Enrolled in CFBAI	Year of Enrollment	US Listing Status at Enrollment	Non-Enrolled Company Taken as Closest Competitor
1	Burger King Corp.	2007		Wendy's International, Inc.
2	McDonalds's USA	2007		Sonic Corp.
3	The Coca-Cola Company	2007		Monster Worldwide, Inc.
4	PepsiCo, Inc.	2007		National Beverage Corp
5	General Mills, Inc.	2007		Seneca Foods Corp
6	Mars, Inc.	2007	Private	–
7	The Hershey Company	2007		Rocky Mountain Chocolate Factory
8	Campbell Soup	2007		Dean Foods Company
9	Kellogg Inc.	2007		Hain Celestial group.
10	Kraft Foods Group, Inc.	2007		J. M. Smuckers Company
11	Unilever United States	2007		J & J Snack Foods Corp.
12	ConAgra Foods, Inc.	2008		Treehouse Foods, Inc.
13	Nestle USA	2008	Not listed in the US	–
14	The Dannon Company	2008	Not listed in the US	–
15	Post Foods, LLC	2009	Not listed in the US	–
16	Hillshire Brands[a]	2011		Tyson Foods, Inc.
17	Ferrero U.S.A, Inc.	2013	Not listed in the US	–
18	Mondelez Global LLC	2013	Private	–
19	American Licorice Corp.	2015	Private	–

Panel B: Average Differences between CFBAI Companies and Their Non-Enrolled Competitor

	Enrolled in CFBAI	Non-Enrolled Competitor
Sales ($ million)	$16,092	$3,935
Book value of assets ($ million)	$17,055	$2,191
Market value of equity ($ million)	$35,441	$2,050
Number of employees	95,000	14,000

Note: Figures as of fiscal year-end prior to enrollment.
[a]Hillshire Brands (formerly Sara Lee) did not renew participation in the CFBAI for 2014.

evident is that on all counts the companies enrolled in the CFBAI are the major players in their industry by a wide margin compared to their closest competitor. They are therefore likely to have major impact on the success and future of the CFBAI in particular and on the Food and Beverage products advertised to kids under 12 in general. Given the difference in size for the two groups, the evidence also suggests that potential benefits from joining the CFBAI via hurting competitors is likely to be small and so that may not be the primary motive for companies to enroll in the CFBAI.

Table 2 presents findings pertaining to the effect of enrollment on the shareholders of companies enrolled in the CFBAI. The evidence in Panel A indicates that the mean cumulative abnormal share price reaction over the window (day −3, day +3) surrounding the date of enrollment (day 0) is −1.51% and is reliably negative based on the time-series, cross-sectional, and bootstrap test statistics (the median abnormal return is −1.17%). Even based on monthly data (Panel B), the abnormal return for the month in which companies enroll in the CFBAI is reliably negative (mean −3.12%, median −2.36%).

The findings in Panel C indicate that these negative abnormal returns translate into an average abnormal loss of $471 million per firm during the window (day −3, +3) surrounding the date of enrollment and an average abnormal loss of $675 million dollars during the month of enrollment (the median loss is $231 million). The parametric test statistic for the three-day window is only −1.66, that is, suggesting weak statistical significance in a two-sided test, but still for a small sample size of 12 it suggests that the loss is not something that can be ignored (i.e., not by chance). The evidence about the loss over the window (day − 1, +1) and over the month of enrollment are all reliably negative. Thus, the evidence suggests that the equity market takes a dim view when companies enroll in the CFBAI − it perceives enrollment in the CFBAI as a negative net present value project.

The subsequent long-term picture, however, turns out to be very different. Findings in Panel B indicate that over the one-year period (month +1, +12) following the month of enrollment (month 0), the cumulative average abnormal return (i.e., per firm) is positive 12.53%. The average abnormal return cumulated over the five-year period subsequent to enrollment (month +1, +60) is positive 16.64% (median return of 14.74%). Although the test statistics are not significant at conventional levels, the time-series and bootstrap statistics reject the one-sided null of negative abnormal returns at conventional levels. Thus, the findings indicate that post-enrollment returns more than make up the initial negative returns to the shareholders.

Table 2. Average Cumulative Abnormal Return to Stockholders of Companies that Enrolled in the CFBAI.

Panel A: Cumulative Abnormal Returns Surrounding the Day of Enrollment (Day 0)

Window (in Days)	Mean Abnormal Return (%)	Median Abnormal Return (%)	Proportion Positive	Time-Series *t*-Stat.	Cross-Sectional *t*-Stat.	Bootstrap *t*-Stat.
(−3, +3)	−1.51	−1.17	0.25	−1.90**	−2.62**	−2.62**
(−1, +1)	−0.54	−0.55	0.25	−1.03	−1.89**	−1.88**
Day 0	0.05	0.02	0.50	0.17	0.21	0.22

Panel B: Cumulative Abnormal Returns Surrounding the Month of Enrollment (Month 0)

Window (in Months)	Mean Abnormal Return (%)	Median Abnormal Return (%)	Proportion Positive	Time-Series *t*-Stat.	Cross-Sectional *t*-Stat.	Bootstrap *t*-Stat.
Month 0	−3.12	−2.36	0.25	−2.32**	−2.49**	−2.30**
(+1, +12)	12.53	6.84	0.58	1.55	0.85	1.55
(+1, +60)	16.64	14.74	0.67	1.60	0.90	1.58

Panel C: Cumulative Abnormal Gains Surrounding the Day of Enrollment

Window	Average Abnormal Gain ($ Million)	Median Abnormal Gain ($ Million)	Parametric *t*-Stat.	Non-Parametric *z*-Stat.
Day (−3, +3)	−$471.3	−$231.5	−1.66	−2.05**
Day (−1, +1)	−$233.9	−$109.0	−1.79*	−1.70*
Day 0	$0.49	$9.2	0.02	0.05
Month 0	-$675.4	−$510.2	−2.37**	−2.23**
Month (+1, +12)	$7283.1	$2153.4	2.44**	3.29***
Month (+1, +60)	$15197.9	$914.2	1.80*	0.73

Notes: Abnormal returns are computed using the Fama-French four-factor model. Day 0 represents the day on which a company enrolls in the CFBAI (month 0 represents the month of enrollment). Daily returns are used for computing short-term abnormal returns around day zero and monthly returns are used for computing long-term pre- and post-enrollment abnormal returns. Abnormal gains for a company over a particular window are computed as the product of the market value of equity one month prior to day zero and the cumulative abnormal returns for that window (Panel C). Sample size = 12.

***, **, and * represent two-tail significance at the 1%, 5%, and 10% levels, respectively.

The evidence in Panel C indicates that these long-term positive abnormal returns translate into significant positive average abnormal gains of $7.3 billion over the year after enrollment and $15.2 billion over the five years after enrollment pre firm (the median five-year abnormal gain is much lower at $900 million). The cross-sectional range in the market value of equity of companies enrolled in the CFBAI is substantial (the smallest is $2 billion and the largest is over $110 billion prior to enrollment) and this drives the difference in mean and median abnormal gains. Nonetheless, only 25% of the enrolled firms experience positive abnormal returns (and hence dollar abnormal gains) at the time of enrollment, but this proportion more than doubles to over 67% during the subsequent five years. Thus, the overall inference that shareholders experience negative abnormal returns when their company enrolls in the CFBAI but subsequently more than make up for the initial loss is not due to outliers.

Table 3 provides findings about the effect on the shareholders of companies that do not join the CFBAI when their competitor enrolls in the CFBAI. The cumulative average abnormal returns to the shareholders of these non-enrolled companies over the seven-day window (day −3, +3) around the day of enrollment is −2.17% (recall from Table 2 that it is −1.5% for those enrolled in the program). For the month of enrollment the cumulative average abnormal return is −3.08% (it is −3.12% for companies enrolled in the program) and the test statistics indicate significance at conventional levels. Findings based on median abnormal returns and the proportion of companies experiencing positive abnormal returns, like the findings based on mean abnormal returns, indicate that shareholders of non-enrolled companies too experience negative abnormal returns around the time that their competitor enrolls in the CFBAI.

Recall from the findings in Table 1, the closest competitors that do not enroll in the CFBAI are much smaller in size relative to companies that enroll in the program. So, the negative average abnormal returns of the non-enrolled companies although on par with those enrolled in the program translate into smaller level of abnormal losses. The average abnormal loss is $49 million over the window (day −3, +3) and the average loss is $129 million for the month of enrollment and these are statistically significant (the corresponding losses for the enrolled group are $471 million and $675 million, respectively). Thus, the evidence in Tables 2 and 3 indicates that shareholders of companies enrolled in the CFBAI experience significant negative returns at the time of enrollment and so do the shareholders of their closest competitors that do not enroll in the program.

Table 3. Average Cumulative Abnormal Return to Stockholders of Companies Not Enrolled in the CFBAI but Are the Closest Competitor to Those Enrolled in the Initiative.

Panel A: Cumulative Abnormal Returns Surrounding the Day of Enrollment (Day 0)

Window (in Days)	Mean Abnormal Return (%)	Median Abnormal Return (%)	Proportion Positive	Time-Series *t*-Stat.	Cross-Sectional *t*-Stat.	Bootstrap *t*-Stat.
(−3, +3)	−2.17	−1.86	0.25	−1.53	−2.34**	−1.53
(−1, +1)	−1.67	−1.12	0.25	−1.81*	−1.97**	−1.85**
Day 0	−1.14	−0.90	0.16	−2.13**	−2.53**	−2.13**

Panel B: Cumulative Abnormal Returns Surrounding the Month of Enrollment (Month 0)

Window (in Months)	Mean Abnormal Return (%)	Median Abnormal Return (%)	Proportion Positive	Time-Series *t*-Stat.	Cross-Sectional *t*-Stat.	Bootstrap *t*-Stat.
Month 0	−3.08	−4.98	0.17	−1.51	−1.06	−1.51
(+1, +12)	−19.14	−14.18	0.33	−2.71***	−1.47	−2.72**
(+1, +60)	−34.57	−50.41	0.33	−2.83***	−1.47	−2.82**

Panel C: Cumulative Abnormal Gains (in $ million) around the Date of Enrollment

Window	Average Abnormal Gain ($ million)	Median Abnormal Gain ($ million)	Parametric *t*-Stat.	Non-Parametric *z*-Stat.
Day (−3, +3)	−$49.21	−$20.19	−1.56	−1.75
Day (−1, +1)	−$64.19	−$15.79	−1.64	−1.35
Day 0	−$42.08	−$16.72	−1.78*	0.01
Month 0	−$129.09	−$86.11	−2.82**	−2.71**
Month (+1, +12)	−$529.46	−$58.26	−1.30	−2.85**
Month (+1, +60)	−$1,608.46	−$142.20	−1.30	0.80

Notes: Abnormal returns are computed using the Fama-French four-factor model. Day 0 represents the day on which a company enrolls in the CFBAI (month 0 represents the month of enrollment). Daily returns are used for computing short-term abnormal returns around day zero and monthly returns are used for computing long-term pre- and post-enrollment abnormal returns. Abnormal gains for a company over a particular window are computed as the product of the market value of equity one month prior to day zero and the cumulative abnormal returns for that window (Panel C). Sample size = 12.

***, **, and * represent two-tail significance at the 1%, 5%, and 10% levels, respectively.

The similarity in the share price reaction between the two groups, however, ends at the time of enrollment. While the shareholders of companies that enroll in the program experience significant positive abnormal gains over the five-year period after enrollment which more than makes up the initial negative impact at the time of enrollment, shareholders of non-enrolled competitors experience further loss of wealth during the five year after enrollment. Over the five years after enrollment, in addition to the abnormal returns of −3% at the time of enrollment, shareholders of non-enrolled companies experience an average abnormal return of −35% (median abnormal return of −50%). Like the cross-section of companies enrolled in the CFBAI, even their non-enrolled competitors differ vastly in market value of equity (smallest $83 million to largest $6 billion). Therefore, over the five year after enrollment, the negative abnormal returns translate into mean abnormal loss of $1.6 billion but a median loss of $142 million. Although the mean and median abnormal losses are substantially different, findings about proportion of firms experiencing positive abnormal returns (17% at the time of enrollment and only 33% during the five years after enrollment) indicate that the evidence is not due to outliers. Overall, findings in Table 3 indicate that shareholders of companies not enrolled in the CFBAI experience negative wealth effect when their competitors enroll in the initiative and the misery increases over the next five years.

Findings in Tables 2 and 3 indicate that the equity market reaction is alike for the two groups of companies at the time of enrollment but diverges substantially during the post-enrollment period. It seems unlikely that the market overreacts at the time of enrollment toward companies that join the program (hence the about face in the post-enrollment period) and simultaneously commits the error of under reaction to those that did not join the program (hence the continued negative reaction in the post-enrollment period). Therefore, it seems reasonable to assume that the equity market response to enrollment by companies in the CFBAI is efficient.

The above view receives support from findings regarding correlations between the abnormal returns to the companies in the two groups. Table 4 reports these correlations. The abnormal returns at the time of enrollment are uncorrelated with the post-enrollment five-year abnormal returns for companies that enroll in the initiative as well as their competitors that do not join the initiative. This suggests lack of systematic relationship between the market reaction at the time of enrollment and the subsequent long-term reaction. The post-enrollment returns therefore are likely to be driven by resolution of uncertainty regarding the impact on the profit bottom line of companies in the two groups. The abnormal returns to companies that

Table 4. Correlation between Short-Term and Long-Term Abnormal Returns to Companies Enrolled in the CFBAI and Their Non-Enrolled Closest Competitors.

Correlation Coefficient (*p*-value)			
	CAR (Month 1, 60) Enrolled Companies	AR (Month 0) Non-Enrolled Competitors	CAR (Month 1, 60) Non-Enrolled Competitors
AR (month 0) Enrolled Companies	0.087 (0.78)	−0.081 (0.80)	−0.246 (0.44)
CAR (month 1, 60) Enrolled Companies		−0.174 (0.59)	−0.282 (0.37)
AR (month 0) Non-Enrolled Competitors			−0.044 (0.89)

Notes: Abnormal returns (AR) and Cumulative Abnormal Returns (CAR) are computed using the Fama-French four-factor model. Month 0 represents the month of enrollment. Sample size = 12.

enroll in the program and their matched competitors show no correlation at the time of enrollment (correlation coefficient −0.08, *p*-value 0.80). Similarly, the post-enrollment five-year returns for the two groups exhibit no correlation (correlation coefficient −0.28, *p*-value 0.37). This evidence contradicts the hypothesis that companies enroll in the social responsible initiative with the intention of benefitting at the expense of their competitors.[2] This perhaps is not surprising because it reinforces the inference from Table 1 that the companies enrolled in the CFBAI are much larger than their closest competition and so any gains arising from hurting competition is likely to be very small and so the primary motive for joining the CFBAI is unlikely to be predatory in nature.

Table 5 presents findings about the impact on some of the relevant financial ratios of companies enrolled in the CFBAI and their non-enrolled competitors. For comparing the before and after changes in these ratios, the study averages the ratios over the five years before and after enrollment (the year of enrollment is ignored). Parametric as well as non-parametric tests indicate that none of the ratios exhibit significant changes after enrollment and hence we report only the mean ratios and not the test statistics for brevity. Although the test statistics fail to reveal significant changes in the ratios before and after enrollment, the consistent change in the direction across the ratios for the two groups is informative.

Table 5. Differences in Relevant Financial Aspects of Companies Enrolled in the CFBAI and Their Non-Enrolled Closest Competitors before and after Enrollment.

	Companies Enrolled in the CFBAI		Closest Competitor not Enrolled in CFBAI	
	Pre 5 Years Mean (Median)	Post 5 Years Mean (Median)	Pre 5 Years Mean (Median)	Post 5 Years Mean (Median)
Sales/Book-equity	4.00	4.55	2.55	2.46
Employees (1000s)	95.66	95.67	13.95	13.67
Sales/Employee	$297.7	$341.3	$449.3	$485.7
Operating margin (%)	18.75	19.66	13.33	13.18
Profit margin (%)	13.31	14.83	7.49	6.45
Return on investment (%)	14.73	15.10	9.28	10.50
Return on assets (%)	8.42	9.48	5.56	5.70
Market/Book assets	2.23	2.28	2.56	2.21
Employees (1000s)	95.66	95.67	13.95	13.67

Note: Year 0 is taken to be the year in which a company enrolls in the CFBAI and that year is also taken as year 0 for its closest competitor that does not enroll in the CFBAI. The pre and post figures do not include those for year zero.

The sales/revenue ratio improves slightly for companies that join the CFBAI but deteriorates slightly for those that do not join the initiative. On average, the number of employees working for companies before and after enrollment in about the same but it declines slightly for the non-enrolled competitors. Joining the initiative has a beneficial effect on the revenue generated per employee for both groups of companies. For companies that enroll in the initiative, the average revenue per employee during the five years after enrollment increases to $341 from the pre-enrollment five-year average of $298. The corresponding figures for their non-enrolled competitors are $486 and $341. The enrolled companies are much larger and so the revenue per employee and the improvement in this ratio is likely to be at a different scale for the two groups of companies in the sample. For companies enrolled in the CFBAI, on average, the operating margin (EBIT/Sales) improves from a level of 18.75% before enrollment to 19.66% after enrollment and their profit margins improves from 13.31% to 14.83%. These ratios register a slight decline for their non-enrolled competitors (operating margin declines from 13.33% to 13.18% and profit margin declines from 7.49% to 6.45%).

As indicated previously, changes in none of the financial ratios relative to their pre-enrollment levels for the two groups of companies are statistically significant. However, financial ratios likely to capture operational efficiency (revenue per employee, operating margin, and profit margin) all move in the positive direction for companies after they enroll in the CFBAI. This suggests that their operational efficiency is likely to have increased after enrollment in the CFBAI. Sometimes increase in efficiency comes via layoffs but that does not appear to be case for companies enrolled in the initiative because their average level of employment is about the same after enrollment. It is therefore not surprising that the average market-to-book ratio of assets, an indication of future growth prospects, improves for these companies after enrollment.

The findings taken together indicate that shareholders of companies enrolled in the CFBAI gain substantially after enrollment in this socially responsible initiative and the gains do not appear to come at the expense of the shareholders of competitors that do not join the initiative or via reduction of employees but perhaps come from improvement in operational efficiency of these companies.

CONCLUSION

Our empirical findings specific to the Children's Food and Beverage Advertising Initiative is that it is likely to have a significant impact on the nutritional content of foods and beverages advertised to young kids because the companies enrolled in it are very large (many of them are their industry leaders). While shareholders of companies enrolled in this voluntary initiative experience significant abnormal gains over the five year after enrollment that of the competing companies not enrolled in the initiative experience significant negative impact over the same time horizon. The gains to the two groups are uncorrelated and so benefitting at the expense of competition does not appear to be the primary motive behind enrollment. Instead, our findings point toward the possibility that the gains arise from internal changes made by enrolled companies and this did not involve reducing the number of employees.

In a broader sense, the findings suggest that shareholders can benefit substantially if their company is well suited to be socially responsible, but hurt them substantially if it is not. Furthermore, gains from increased social responsibility can arise from internal efficiency improvements and not at the expense of employees or via hurting competition.

NOTES

1. See the 2015 report on childhood obesity by the Commission on Ending Childhood Obesity (WHO): http://www.who.int/end-childhood-obesity/commission-ending-childhood-obesity-draft-final-report-en.pdf?ua = 1

2. For the sake of brevity, we do not include the correlations of the abnormal returns cumulated over one-year and three-year windows after enrollment because the inferences stay the same.

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REGULATION AND THE OWNERSHIP STRUCTURE OF EUROPEAN LISTED FIRMS

Marc Steffen Rapp and Oliver Trinchera

ABSTRACT

In this paper, we explore an extensive panel data set covering more than 4,000 listed firms in 16 European countries to study the effects of shareholder protection on ownership structure and firm performance. We document a negative firm-level correlation between shareholder protection and ownership concentration. Differentiating between shareholder types, we find that this pattern is mainly driven by strategic investors. In contrast, we find a positive correlation between shareholder protection and block ownership of institutional investors, in particular when we restrict the analysis to independent institutional investors. Finally, we find that independent institutional investors are positively associated with firm valuation as measured by Tobin's Q. The opposite applies for strategic investors. Overall, our results are consistent with the view that (i) high shareholder protection and (ii) limited ownership by strategic investors make small investors and investors interested in security returns more confident in their investments.

Keywords: Ownership structure; shareholder protection; institutional ownership; Europe

JEL classifications: G20; G32; G38

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INTRODUCTION

A central theme in the law and finance literature is the quest to understand the cross-country determinants of ownership structures of listed firms and the agency costs associated with different ownership structures. In many countries, listed firms account for a significant part of the economy and listed equity represents an important source of financing for the corporate sector. Simultaneously, listed equity represents a major part of the investment universe of private households. Thus, it is central to understand the costs and benefits of listed equity. While there are several commonly known benefits of listed equity, for example, separation of management and risk-taking (Fama, 1980), it is also well known that listed equity comes for the cost of separation of ownership and control (Fama & Jensen, 1983). The latter may create inefficiencies due to managerial discretion and agency problems between the management and (small) shareholders (Berle & Means, 1932; Burkart, Gromb, & Panunzi, 1997; Jensen & Meckling, 1976).

A well-established strand of the literature argues that blockholders might improve the situation by carefully monitoring the management. These monitoring activities produce shared benefits of control improving the situation of small shareholders, whenever blockholders own less than 100 percent of cash flow rights in the firm (Shleifer & Vishny, 1986). However, small shareholders may also face costs in case of large and influential blockholders, as the latter might misuse their power to enjoy private benefits at the expense of minority shareholders (Shleifer & Vishny, 1997). Although rather antithetic from their conceptual underpinning, both the *value-enhancing* "monitoring effect" as well as the *value-destroying* "expropriation effect" of blockholders rest on the same ground: the limited power (and incentives) of small shareholders to express and enforce their interests. With the latter being a result of legal (minority) shareholder protection the relative relevance of both effects and thus the fundamental economic trade-off of block ownership arguably varies across countries.[1]

The importance of regulatory rules for investors is documented by La Porta, López-de-Silanes, Shleifer, and Vishny (1997) and the subsequent law and finance literature. Building on arguments well known in the law literature, the authors argue in several studies that the institutional environment is affected by a country's legal origin and fosters, among others, a country's capital market development (La Porta, López-de-Silanes, & Shleifer, 2008).[2] Moreover, La Porta, López-de-Silanes, Shleifer, and Vishny (1998) and La Porta, López-de-Silanes, and Shleifer (1999) document that ownership structures reflect the institutional environment in a way that shareholder

concentration correlates negatively with the level of outside shareholders' legal protection. This finding was subsequently confirmed by a series of empirical studies (Donghui, Moshirian, Pham, & Zein, 2006; Roe, 2006; Stulz, 2005).

Two lines of arguments support the empirically observed negative correlation between shareholder protection and ownership concentration. On the one hand, there is the substitution view arguing that limited shareholder protection increases the scope for moral hazard in firms and large blockholders are required to alleviate the problems (La Porta et al., 1998). Under this view, blockholders serve as a substitute for weak legal protection of minority shareholders. On the other hand, there is the complementary view arguing that under weak legal constraints blockholders collude with the management in order to appropriate corporate resources.[3] Under that view, blockholdings are encouraged by limited legal protection of minority shareholders, since such legislation allows blockholders to enjoy private benefits. Evidently, these are two polar views on the role of blockholders in listed firms (Holderness, 2012).

However, recent research casts doubt on this seemingly well-established negative correlation between shareholder protection and ownership concentration. First, Pagano and Volpin (2005), Spamann (2010) and others criticize the way La Porta et al. (1998) code the national commercial law to measure minority shareholder protection. Effectively, these authors criticize the construction of the now-seminal antidirector rights index. Moreover, several researchers criticize the ad hoc nature of the measure (Djankov, La Porta, López-de-Silanes, & Shleifer, 2008). Responding to both line of critique Djankov et al. (2008) develop two new measures of minority shareholder protection: the revised antidirector rights index and the newly invented anti-self-dealing index.

Second, Holderness (2012) discusses problems related to the commonly applied method that regresses small-sample country averages of ownership concentration on measures of shareholder protection as used by La Porta et al. (1998); La Porta et al. (1999); La Porta, López-de-Silanes, and Shleifer (2006); Stulz (2005); Roe (2006); Donghui et al. (2006); La Porta et al. (2008); Djankov et al. (2008) and others. First, there are doubts that the small samples covering solely large, international firms are representative for the country aggregate. Second, from a conceptual perspective the use of country averages comes along with the problem of omitted variables as well as aggregation biases (Robinson, 1950).

And in fact, it turns out that both criticisms cast substantial doubt on the initial claim. First, using the country average regression method Djankov et al. (2008) find only limited evidence for a negative correlation

between their new measures of shareholder protection and ownership concentration. Second, Holderness (2012) even claims that he is not able to detect any convincing negative correlation, when he estimates firm-level regressions taking into account firm characteristics that are well known for affecting ownership concentration. Moreover, note that Cronqvist and Fahlenbrach (2009) provide convincing evidence that there is substantial blockholder heterogeneity. Thus, it seems unheeding simply to look at ownership concentration and to completely neglect the type of shareholder invested in the firms.

In this paper, we explore an extensive novel panel data set covering more than 4,000 listed firms in 16 European countries to study the effects of shareholder protection on ownership concentration.[4] In a first step, we examine overall ownership concentration. We find supportive evidence for a negative effect of legal shareholder protection on ownership concentration, even in large-sample regression analyses based on firm-level data where we account for a broad set of firm- and country-characteristics and use the revised versions of legal indices measuring shareholder protection as developed by Djankov et al. (2008). Our results are robust against various measures of ownership concentration. Moreover, they are economically meaningful. For example, a one standard deviation increase of shareholder protection as measured by the anti-self-dealing index (the revised antidirector rights index) is associated with an 18.4 (19.9) percent lower ownership stake of the largest blockholder.

However, Giannetti and Simonov (2006) point out that it is important to differentiate between investors interested in private benefits (including private information) and investors interested in security benefits only. Thus, in the second step we differentiate between two shareholder types, namely strategic and institutional investors.[5] Strategic investors are often supposed to invest for financial reasons as well as purposes beyond financial benefits, that is, strategic reasons (Gedajlovic, Yoshikawa, & Hashimoto, 2005; Giannetti & Simonov, 2006). Institutional investors, like investment advisors, mutual funds, banks, insurance firms and other financial institutions have discretionary power over assets under management and make buy and sell decisions mostly based on financial considerations. And in fact, our results suggest that the negative effect of shareholder rights is mainly driven by strategic investors. The correlation between ownership concentration and the level of shareholder protection is negative, when we focus on strategic investors. In contrast, the relation becomes negative, when we examine institutional investors.

Moreover, recent evidence suggests that monitoring incentives and abilities vary even among institutional shareholders (Chen, Harford, & Li, 2007;

Cornett, Marcus, Saunders, & Tehranian, 2007; Elyasiani & Jia, 2010; Ferreira & Matos, 2008). Thus, in a third step we follow Ferreira and Matos (2008) and others and further differentiate two groups of institutional investors: independent institutions, like investment advisors and mutual funds, and grey institutions, like banks, insurance firms and other institutions. While the former are generally interested in security returns only, the latter are often also interested in ongoing (and potential) business relationships. In order not to put these relationships at risk grey institutional investors tend to be more devoted to the management of the company. In line with the view that grey institutions basically are similar to strategic investors (Ferreira & Matos, 2008), we find that the positive effect of shareholder rights on institutional ownership is fundamentally driven by independent institutional investors and shareholdings of grey institutions are actually higher in countries with poor shareholder protection.

Finally, in a fourth step, we try to shed light on the rationale for the above empirical findings. Thus, we examine whether ownership stakes of different shareholder groups are systematically related to firm valuation. We find that while strategic shareholdings affect firm valuation negatively, ownership by independent institutionals has positive effect for firm valuation. Moreover, these effects are particularly pronounced in countries with weak shareholder protection.

In sum, our results suggest that strategic investors are attracted by weak shareholder protection and come at the expense of the marginal investor. As such, they are consistent with the complementary view of blockholdings. In contrast, institutional blockholdings go hand in hand with shareholder protection and have a significantly positive effect on firm value. Thus, our results suggest that (i) high shareholder protection and (ii) limited ownership by strategic investors increase interest and confidence of small investors and investors interested in security returns only.

We challenge our results by a series of robustness tests. Our results prove to be robust for various measures of ownership concentration and various firm-level controls. Moreover, while our primary focus is on the anti-self-dealing index of Djankov et al. (2008), they also prove to be robust against using the revised antidirector rights index and the legal origin. Also, the results are robust against various econometric specifications and estimation methods. Finally, the valuation effect of different shareholder types turns out to be robust under various regression settings, various performance proxies, and 3SLS regression methods.

We contribute to the literature in several ways. First, we explore an extensive novel ownership data set. Second, we are among the first that

examine the effect of the legal environment on ownership concentration using firm-level observations taking into account firm-level characteristics. Third, we simultaneously examine the effect of shareholder protection on overall concentration, strategic blockholders, and various types of institutional ownership. Fourth, taking into account implications for firm performance, our analysis sheds light on the substitution versus complementarity controversy of corporate ownership. Altogether our results contribute to a better understanding of the mechanisms between legal protection, ownership structure, and firm performance.

The remainder of this paper is structured as follows. The section "Sample and Data Description" documents the sample selection process. The section "Ownership Structures of European Listed Firms" explains the variables and reports the summary statistics. The sections "Regulation and Ownership Structures" and "Regulation, Ownership Structure, and Firm Performance" present the results of the empirical analysis. The final section concludes.

SAMPLE AND DATA DESCRIPTION

This section documents the sample selection process as well as the variables used in the subsequent analysis. Specifically, we describe our measures of ownership concentration, measures of the country-specific regulatory environment, as well as firm-specific variables. All variables are defined in Appendix C.

Sample Construction

Our initial sample consists of all (active and inactive) firms that have been (i) listed between 1999 and 2008 and (ii) located in one of the following European countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom. Fig. 1 illustrates the geographic location of our sample countries. Relying on the December 2008 edition of Thomson One Banker Analytics, this yields an initial sample of 8,553 firms.

We clean the data in several steps. First, we exclude firms with primary securities other than common shares or firms with missing information on the type of the primary security. Second, we remove firms that are located in offshore domiciles such as Guernsey or the British Virgin Islands. Third, we follow the common practice and exclude both financial firms (Standard

Fig. 1. Geographic Distribution of Sample Countries. *Notes*: The figure illustrates the geographic distribution of our sample. Our final sample covers 4,073 publicly listed firms over the period 1999–2008 in 16 European countries. The countries are: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

Industrial Classification (SIC) codes 6000-6999) and utilities (SIC codes 4900-4949). Fourth, we drop firms with limited capital market and accounting data. Last, we restrict the sample to firms for which ownership information is available in at least one year. Altogether this selection process results in a final sample of 4,073 companies. Table 1 summarizes the sample selection process. Details about the sample composition are reported in Appendix A.

Measures of Ownership Concentration

Our raw ownership data comes from Thomson One Banker (TOB) ownership module, which reports publicly available direct shareholdings including information from fund holdings. Thus, the TOB ownership module reports up to 30 shareholders for a firm, including their name and their ownership stake. Moreover, TOB classifies these shareholders into various types, for example, corporations, strategic entities, holding companies, families and individuals, government agencies, mutual funds, investment advisors, banks, and insurance companies. TOB reports historical ownership information from 1997 onward. To ensure high data quality we extract annual data from 1999 onward. The ownership data is collected each year as of December 31. The information we gather includes: The identity of the shareholder, the size of his shareholding, and the classification of the shareholder.[6]

Having collected the raw data, we carefully revise and adjust the data in a four-step process. First, to ensure the data quality we only consider ownership stakes at a minimum of 5 percent, that is, we only consider blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006).[7] Second, we manually cross-check the data by looking at the sum of all shareholdings and correct the data for firm years with cumulated shareholdings larger than 100 percent reported.[8] Third, we compare the shareholdings in year t with the shareholdings in year $t-1$ and $t+1$. This allows us to identify actual (but temporary) block sales, that is, cases where a shareholder was owning a certain stake in year $t-1$, selling it in year t and buying it back in $t+1$, and to separate these cases from omitted entries, that is, cases where TOB omitted the ownership stake in year t. We carefully cross-checked these cases manually and corrected them if necessary. Fourth, we cross-check the shareholdings in year t and year $t+1$ to identify decreases larger than -85 percent or increases larger than

Table 1. Sample Generation Process.

Description	Number of Firms
Thomson One Banker sample (1999–2008)	8,553
Firms with non-common share classes	−159
Firms that are located in offshore domiciles	−125
Financial and utility firms	−1,537
Firms without fundamental accounting figures (e.g., total assets, sales, total common equity) and only limited capital market data	−1,263
Firms without ownership information	−1,396
Final sample	4,073

Notes: This table documents the sample generation process. The final sample covers 4,073 publicly listed firms in 16 European countries. Thomson One Banker is the primary source for the identification of the sample companies. The exclusion of financial firms and utilities is based on the Standard Industrial Classification (SIC). The range of SIC codes for financial firms is 6000-6999 and 4900-4949 for utility firms. Accounting and ownership data is collected annually. The ownership data is collected each year as of December 31.

850 percent. We do so in order to identify typos with regard to the decimal separator, that is, situations where a shareholder holds $x.yz$ percent in year t and $0.xyz$ or $xy.z$ percent in year $t+1$. We judiciously cross-check these cases and correct them otherwise.

Having carefully cross-checked and corrected the original data, we use the cleaned data to measure ownership concentration at the firm level. Note that there are various measures of ownership concentration used in the literature. Shleifer and Vishny (1986) for instance simply consider the fractional ownership of the largest shareholder. Demsetz and Lehn (1985) and La Porta et al. (1998) consider the n largest shareholders. Others measure the aggregate ownership stake of all blockholders, where blockholders are defined as shareholders with a minimum fractional ownership equal to a certain threshold (Baysinger, Kosnik, & Turk, 1991; Hill & Snell, 1988). These measures of ownership concentration are linear in nature and do not provide much information about the distribution of ownership stakes, which may however be relevant when interested in issues of control (Cubbin & Leech, 1983). The Herfindahl index of ownership concentration captures the distribution of ownership stakes and aims to eliminate the weaknesses of the previous measures (Baysinger et al., 1991; Hay & Morris, 1979).

In a first step, we calculate four firm-specific measures of overall ownership concentration. First, we define *L1Block* as the share of the largest blockholder (and zero, in the case that there is no blockholder). Second,

L3Block measures the cumulated share of the three largest blockholders. Moreover, we also aggregate all blockholdings and define *FreeFloat* as 100 percent less the cumulated share of all blockholders. Finally, we calculate the Herfindahl index, which we denote by *HerfInd*, by summing the squared percentage of equity stakes controlled by each blockholder (Demsetz & Lehn, 1985).

In a second step, we differentiate between institutional and strategic investors. A large body of literature documents that institutional investors can provide valuable active monitoring (Black, 1992a,1992b; Cremers & Nair, 2005; Gillan & Starks, 2000, 2003; Kochhar & David, 1996). Thus, we define *Institutional* measuring the cumulated share of institutional blockholders. Following Gompers and Metrick (2001), Ferreira and Matos (2008) and others, institutional investors represent institutions that have discretionary power over assets under management and make buy and sell decisions. Specifically, the group comprises investment managers, mutual funds, banks, insurances, endowments and other institutional entities. All other shareholders are classified as strategic investors and *Strategic* stands for the cumulated shareholding held by these investors. Strategic investors thus comprise entities such as corporations, holding companies and families and individuals. These investors often invest not solely for security returns, but also for strategic objectives. Note that beside their role as shareholder, individuals may also fulfill a role as officer or director.

In a third step, we follow Brickley, Lease, and Smith (1988); Almazan, Hartzell, and Starks (2005); Chen et al. (2007); Ferreira and Matos (2008) and others and classify institutional investors as independent institutions and grey institutions. Investment advisors and mutual funds are considered to be interested in security returns only. Thus, cumulated shareholdings of these institutions is coded *Independent*. In contrast, banks, insurance firms, and other institutions are considered to be also interested in ongoing (and potential) business relationships (Ferreira & Matos, 2008). Thus, cumulated shareholdings of these institutions is coded *Grey*.

Measures of Regulation and Shareholder Protection

We aim to understand the cross-country determinants of ownership structure in listed equity. Thereby, we are particularly interested in the ceteris-paribus effect of the legal environment. Accordingly, we consult various sources to collect information for the different countries, including measures

coding the institutional environment. We use this data to classify countries along various dimensions.

In the first step, we aim to classify countries according to their level of shareholder protection. Therefore, we use two well-established proxies for shareholder protection. Our first proxy is the anti-self-dealing index (*Asd*) as presented by Djankov et al. (2008). This index codes the regulation and control of self-dealing transactions by corporate insiders. More precisely, it is derived as follows: Based on a fictitious self-dealing transaction the anti-self-dealing index measures the strength of minority shareholder protection against self-dealing by the controlling shareholder. The more difficult it is for a controlling shareholder to benefit from the transaction, the higher the anti-self-dealing index. The anti-self-dealing index is based on two subindices that measure the regulation before and after the transaction (ex-ante and ex-post component). While the index of ex-ante private control of self-dealing considers approval requirements as well as immediate disclosure requirements, the index of ex-post private control of self-dealing depends on the ex-post disclosure requirements and the ease of proving wrongdoing. The aggregate index ranges from zero to one. Our second proxy is the revised antidirector rights index (*rAdri*) by Djankov et al. (2008). The index measures the level of legal protection of minority shareholders against the interests of corporate insiders. It is the successor of the original antidirector rights index pioneered by La Porta et al. (1998) and used in numerous studies, however, recently criticized for coding problems and conceptual issues (Pagano & Volpin, 2005; Spamann, 2010). The revised version of the index aggregates six subindices which evaluate selected determinants of minority shareholder protection such as the possibility to mail proxy votes, the minimum percentage of votes needed to call an extraordinary shareholder meeting, or the existence of an oppressed minority mechanism. Each subindex counts either 0 or 1 and thus the *rAdri* index also ranges from zero to six. Comparing the anti-self-dealing index and the revised antidirector rights index, Djankov et al. (2008) state that the former is more theoretically grounded and addresses the widespread problem of corporate self-dealing, in particular tunneling, somehow more directly.

In the second step, we follow Reynolds and Flores (1989) and La Porta et al. (1998) and classify countries according to their legal origin. It is well known that although legal systems of countries are quite heterogeneous, there are some common characteristics that allow categorizing national legal systems into major law families. Today we distinguish two broad legal families (*common law* and *civil law* regimes), where the latter is often further divided into systems with French, German, and Scandinavian

origin. La Porta et al. (1998) argue that the shareholder protection varies systematically across legal families. They provide evidence that shareholder protection is strongest in common law countries and weakest in French civil law countries, with German law countries situated in the middle. While La Porta et al. (1998) also argue that civil law countries with Scandinavian law origin are located in the middle, recent research indicates that shareholder protection in Scandinavian civil law countries is not significantly different from common law countries (Djankov et al., 2008).

In the course of robustness tests, we also extend the horizon of regulation toward other dimensions. For instance, we consider the rule of law index (*Rol*) as reported by Kaufmann, Kraay, and Mastruzzi (2009). *Rol* serves as a proxy for the perceived quality of law enforcement. Furthermore, we control for additional governance indicators indices that also go back to Kaufmann et al. (2009) such as government effectiveness (*GovEff*), control of corruption (*CorrContr*), regulatory quality (*RegQual*), political stability (*PolitStab*), and voice and accountability (*VoiceAcc*). In addition to that we also consider an index of law enforcement (*LawEnforcement*) as presented in Djankov et al. (2008) that measures the number of days of a judicial procedure to collect on a bounced check. Finally, we also take into account the protection of debt holders by including the creditor rights index (*Cri*) as reported by La Porta et al. (1998). This is motivated by recent evidence indicating that the creditor rights index might explain some phenomena that previously have been attributed to the level of shareholder protection (Brockman & Unlu, 2009).

Firm Characteristics and Further Control Variables

Demsetz and Lehn (1985), Demsetz and Villalonga (2001) and others provide evidence that a firm's ownership structure correlates with firm characteristics such as size or risk. We measure firm characteristics along four dimensions. First, *Size* is defined as the natural logarithm of the firm's total assets at the end of the fiscal year. Second, *Risk* is measured as the standard deviation of monthly stock returns over a two-year period. Third, *Growth* equals annual sales growth. Fourth, *Leverage* is measured as the ratio of total debt to total assets (both measured in book values).

In the econometric analysis we also control for the stage of financial development in the respective country. Following Demirguc-Kunt and Levine (1996) and Brockman and Unlu (2009) we use *McapListed*, defined as the market capitalization of listed domestic companies deflated by the

gross domestic product in the respective year, as well as *StockTraded*, defined as the total value of shares traded again deflated by the gross domestic product. Demirguc-Kunt and Levine (1996), for instance, argue that stock market development is highly correlated with the development of financial institutions.

Table 2 reports the summary statistics for all our variables.

Table 2. Summary Statistics.

Variable	*N*	Mean	Sd	Median	p25	p75	Min	Max
Panel A: Ownership variables								
L1Block	26,646	0.3030	0.2310	0.2410	0.1170	0.4750	0.0000	1.0000
L3Block	26,646	0.4350	0.2410	0.4250	0.2420	0.6200	0.0000	1.0000
FreeFloat	26,646	0.5400	0.2570	0.5160	0.3430	0.7420	0.0000	1.0000
HerfInd	26,646	0.1640	0.1910	0.0890	0.0270	0.2500	0.0000	1.0000
Strategic	26,646	0.3580	0.2850	0.3490	0.0730	0.5910	0.0000	1.0000
Institutional	26,646	0.1010	0.1450	0.0510	0.0000	0.1550	0.0000	0.9950
Independent	26,646	0.0960	0.1420	0.0500	0.0000	0.1470	0.0000	0.9950
Grey	26,646	0.0040	0.0270	0.0000	0.0000	0.0000	0.0000	0.6540
Global Independent	26,496	0.0550	0.0650	0.0000	0.0000	0.1110	0.0000	0.6820
Global Strategic	26,496	0.3440	0.1990	0.3280	0.1620	0.5310	0.0000	0.9410
Panel B: Measures of regulation and shareholder protection								
Asd	26,646	0.5240	0.2730	0.3790	0.3330	0.9500	0.2030	0.9500
rAdri	26,646	3.7820	0.9280	3.5000	3.5000	5.0000	2.0000	5.0000
Cri	26,646	2.2430	1.4460	2.0000	1.0000	4.0000	0.0000	4.0000
VoiceAcc	26,646	1.3700	0.1750	1.3810	1.2860	1.4890	0.9150	1.8260
PolitStab	26,646	0.8900	0.3500	0.9170	0.5820	1.1700	−0.0330	1.6760
GovEff	26,646	1.7410	0.3660	1.7830	1.6120	1.9620	0.3200	2.3400
RegQual	26,646	1.4840	0.3070	1.5440	1.1840	1.7370	0.8120	2.0110
Rol	26,646	1.5790	0.3240	1.6830	1.3840	1.7530	0.3370	2.0430
CorrContr	26,646	1.7610	0.4600	1.8690	1.4330	2.0800	0.1290	2.5790
LawEnforcement	26,489	5.2200	0.7590	5.2150	4.4190	5.6630	3.8710	7.2370
Panel C: Country characteristics								
StockTraded	26,646	1.1970	0.8080	1.0940	0.6320	1.5880	0.0050	4.1670
McapListed	26,646	1.0060	0.5530	0.8770	0.5720	1.3410	0.1290	3.3330

Table 2. (*Continued*)

Variable	*N*	Mean	Sd	Median	p25	p75	Min	Max
Tax	26,646	1.0280	0.1790	1.0000	0.9330	1.2500	0.5760	1.4080
InstAssets	21,061	1.6290	0.9070	1.4780	1.2060	1.8670	0.3400	10.0580
Panel D: Firm characteristics								
Size	26,646	5.1030	2.1230	4.8880	3.6300	6.4140	−1.5930	12.6010
Leverage	26,646	0.2030	0.1680	0.1830	0.0480	0.3200	0.0000	0.7100
Growth	26,646	0.2470	0.8400	0.0840	−0.0130	0.2350	−0.8290	9.9730
Risk	26,646	0.1300	0.0840	0.1070	0.0770	0.1560	0.0130	0.7410
Roa	26,601	1.1730	17.5160	4.6880	0.2340	8.6560	−99.3000	42.5480
LifeCycle	25,626	−0.3590	2.7190	0.1680	−0.0750	0.5240	−31.5950	1.2260
lnMtb	26,531	0.6200	0.8760	0.5710	0.0450	1.1270	−2.0220	4.2400
Cash	26,635	0.1580	0.1770	0.0950	0.0400	0.2060	0.0000	0.9440
DivYield	24,727	0.0200	0.0330	0.0130	0.0000	0.0300	0.0000	1.1090
IntAcc	26,646	0.5000	0.5000	0.0000	0.0000	1.0000	0.0000	1.0000
lnTobQ	26,531	0.3650	0.5280	0.2530	0.0160	0.6050	−0.9880	3.2260
Global TobQ	26,646	1.3560	0.3490	1.2880	1.1290	1.4730	0.9570	3.1680

Notes: This table reports summary statistics for our variables. The sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999−2008. Panel A reports summary statistics of the ownership variables. Panel B reports statistics on the measures of regulation and shareholder protection. Panel C documents variables that measure country characteristics and Panel D firm characteristics. *N* represents the number of observations. Mean refers to the mean value and Median to the median value. Sd is the standard deviation. p25 and p75 represent the 25th and 75th percentile. Min (Max) is the minimum (maximum) value. All variables are explained in Appendix C. In order to avoid that the empirical results are driven by outliers, all firm-specific variables in Panel D that are defined as ratios are winsorized on a yearly base at the 1 percent level on both tails of the distribution.

OWNERSHIP STRUCTURES OF EUROPEAN LISTED FIRMS

In this section we present a descriptive analysis of the ownership structure of European listed firms. We report country-level data clustered along the legal origin. Our results illustrate heterogeneity of ownership structures and concentration across countries belonging to different legal families.

Table 3 presents the ownership concentration and the presence of different investor types by country. Countries are clustered by origin of law. Ownership concentration measured by the mean share of the largest shareholder *L1Block* varies systematically across law regimes. The concentration is lowest in common law countries (19.1 percent) and highest in French (39.8 percent) and German civil law origin countries (36.2 percent). The mean concentration in Scandinavian law origin countries is with 21.9 percent quite close to the average value of common law countries. Similar results can be found for the other concentration measures such as the cumulated share of the largest three shareholders *L3Block* or the Herfindahl index *HerfInd*. Regarding *FreeFloat* we observe the opposite pattern, that is, common law countries have on average the highest values and French and German civil law countries the lowest. Interestingly Scandinavian civil law countries on average have a higher *FreeFloat* than common law countries. Even though the difference is not significant, this underlines the similarity of ownership structures in common law and Scandinavian civil law regimes.

Next, we examine the presence of various investor types. According to Table 3 the cumulated shareholdings held by different investor types also vary across law regimes. In common law countries the average share of strategic blockholders is 21.8 percent. This is significantly lower than in French (47.8 percent) and German (42.5 percent) civil law countries. Scandinavian civil law countries are with an average share of 26.2 percent quite close to the common law average.

Across all law regimes the average share of institutional investors is smaller than the average share held by strategic investors. The mean institutional share is highest in common law countries (16.2 percent), followed by Scandinavian (11.4 percent), German (6.7 percent) and finally French law origin countries (6.5 percent). A qualitatively similar order can be observed for the subgroup of independent institutional investors. Institutional investors show strong presence in regimes where strategic investors have lower shareholdings.

Grey institutional investors have on average the lowest values in common (0.2 percent) and French law origin countries (0.3 percent). German law (0.7 percent) and Scandinavian law (0.8 percent) legal origin firms have on average the highest share of grey institutionals. Comparing the average shareholdings across institutional subgroups it becomes evident that grey institutional investors own on average considerably lower shareholdings than their independent counterpart.

Table 3. Ownership Concentration in Europe by Country and Legal Origin.

Country	*N*	Ownership Concentration				Cumulated Ownership Stakes by Investor Type			
		L1	L3	FF	HI	Strategic	Institutional	Independent	Grey
Panel A: Country statistics									
Ireland	334	18.8%	32.3%	65.1%	7.4%	19.6%	15.0%	14.6%	0.2%
UK	7,223	19.1%	33.9%	61.7%	7.9%	21.9%	16.3%	16.1%	0.2%
English law origin	*7,557*	*19.1%*	*33.8%*	*61.9%*	*7.9%*	*21.8%*	*16.2%*	*16.1%*	*0.2%*
COMMON LAW	*7,557*	*19.1%*	*33.8%*	*61.9%*	*7.9%*	*21.8%*	*16.2%*	*16.1%*	*0.2%*
Belgium	763	37.2%	47.3%	52.8%	20.4%	42.6%	4.6%	4.4%	0.1%
France	5,033	42.8%	56.1%	42.5%	27.1%	50.7%	6.7%	6.6%	0.1%
Italy	1,616	44.5%	55.0%	43.8%	25.6%	52.1%	4.1%	3.4%	0.6%
Luxembourg	157	36.2%	47.9%	51.0%	21.1%	43.8%	5.2%	5.2%	0.0%
The Netherlands	843	24.5%	36.8%	60.0%	12.2%	26.8%	13.2%	12.5%	0.5%
Portugal	422	40.7%	59.7%	36.5%	25.8%	58.0%	5.5%	4.8%	0.7%
Spain	755	29.0%	42.8%	52.7%	15.7%	42.4%	4.9%	4.2%	0.7%
French law origin	*9,589*	*39.8%*	*52.5%*	*45.8%*	*23.9%*	*47.8%*	*6.5%*	*6.1%*	*0.3%*
Austria	435	38.1%	50.0%	49.3%	21.5%	45.7%	5.0%	4.7%	0.2%
Germany	3,433	38.9%	51.7%	47.1%	23.3%	46.5%	6.5%	5.9%	0.5%
Switzerland	1,217	28.2%	37.6%	62.1%	14.7%	30.1%	7.8%	6.3%	1.3%
German law origin	*5,085*	*36.2%*	*48.1%*	*50.8%*	*21.1%*	*42.5%*	*6.7%*	*5.9%*	*0.7%*
Denmark	816	24.6%	40.0%	56.7%	11.8%	28.2%	15.1%	14.4%	0.7%
Finland	941	21.5%	34.2%	64.2%	9.3%	28.3%	7.5%	5.8%	1.6%
Norway	796	26.3%	40.4%	56.7%	12.3%	33.2%	10.1%	9.8%	0.3%
Sweden	1,862	19.1%	31.7%	66.2%	7.6%	21.3%	12.4%	11.7%	0.6%

Scandinavian law origin	*4,415*	*21.9%*	*35.3%*	*62.3%*	*9.6%*	*26.2%*	*11.4%*	*10.6%*	*0.8%*
CIVIL LAW	*19,089*	*34.7%*	*47.4%*	*50.9%*	*19.9%*	*41.4%*	*7.7%*	*7.1%*	*0.5%*
Panel B: Test of means between different law origins									
Common versus Civil law		52.22***	42.68***	−31.93***	48.09***	53.15***	−45.31***	−48.47***	9.18***
English versus French law origin		−64.34***	−54.41***	43.16***	−59.34***	−64.98***	44.61***	45.98***	−3.49***
English versus German law origin		−48.64***	−37.03***	25.48***	−45.4***	−44.9***	36.28***	39.15***	−10.66***
English versus Scandinavian law origin		−9.45***	−4.07***	−1.01	−8.26***	−9.92***	16.85***	19.29***	−15.42***
French versus German law origin		8.22***	10.10***	−11.43***	7.54***	10.87***	−0.89	1.05	−6.74***
French versus Scandinavian law origin		43.49***	39.73***	−36.15***	41.32***	44.31***	−20.9***	−19.44***	−9.64***
German versus Scandinavian law origin		32.26***	26.85***	−22.23***	31.23***	30.01***	−17.91***	−18.45***	−2.12**

Notes: This table provides information on the mean ownership concentration in the European sample countries. Countries are clustered by legal origin. The sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999–2008. Panel A reports the number of firm-year observations *N* and the mean values for selected ownership concentration measures. Ownership variables reflect all investors owning at least 5 percent the firm's common equity, that is, blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006). All variables are explained in Appendix C.

Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

REGULATION AND OWNERSHIP STRUCTURES

In this section we investigate the relation between shareholder protection and ownership structures of European firms using standard regression methods based on firm-level observations. First, we examine the impact of shareholder protection on different measures of ownership concentration. Second, we examine how shareholder protection affects the presence of strategic and institutional investors. Third, we examine the relation between shareholder protection and the presence of independent and grey institutional investors. Finally, we perform a variety of robustness checks in order to test the validity of our results.

Empirical Design

To examine the impact of shareholder protection on ownership structures, we estimate various specifications of the following empirical model:

$$OS_{i,t} = \alpha + \beta \times ShProt_i + \Phi \times \Sigma_{i,t-1} + \varepsilon_{i,t} \tag{1}$$

where $OS_{i,t}$ represents the ownership structure proxy for firm i in year t and $ShProt_i$ denotes the corresponding measure of shareholder protection (relevant for firm i). Additionally, $\Sigma_{i,t-1}$ represents is a vector of firm-, time- and country-specific control variables. All (time-dependent) right hand side variables are lagged one period.

In the analysis we use various proxies of measuring the ownership structure of firms. Interested in the effect on ownership concentration we use the share of the largest (*L1Block*) and the three largest shareholders (*L3Block*), freefloat (*FreeFloat*), the Herfindahl index (*HerfInd*). Interested in the effect for various types of investors, we use the cumulated ownership stake of all investors classified as the relevant group. Also, we use various measures of shareholder protection. First, we use the anti-self-dealing index (*Asd*). Second, we use the revised antidirector rights index (*rAdri*). Third, we use dummy variables indicating the origin of law. More precisely, we include three civil law dummies (*French Law*, *German Law*, and *Scandinavian Law*) and omit the common law dummy (*UK Law*) as the base case.

Our baseline approach is to estimate model (1) using standard pooled OLS regression analyses with standard errors clustered by firm. However, we challenge our results in various robustness tests in Section 4.4.

Shareholder Protection and Overall Ownership Concentration

In the first step, we are interested in the impact of shareholder protection on overall ownership concentration in European firms. Table 4 presents our baseline regression results, where we estimate various versions of our empirical model defined in Eq. (1).

In Models 1−3 we estimate the impact of shareholder protection on the share of the largest shareholder. The coefficient of the anti-self-dealing index in Model 1 is negative and highly significant: ownership concentration decreases with stronger shareholder protection. Using the antidirector rights index in Model 2 confirms this finding. Again the coefficient is significantly negative.

The economic effects of shareholder protection in Models 1 and 2 are substantial. A one standard deviation increase in shareholder protection as measured by the anti-self-dealing index (revised antidirector rights index) is associated with a 18.4 (19.9) percent decrease of the average share of the largest shareholder.

In Model 3 we use the legal origin as an indicator for shareholder protection. The coefficients of the indicators for German, French, and Scandinavian law are all positive and highly significant. This suggests that the ownership concentration in these law regimes is higher than in common law countries. The coefficients of the *French Law* dummy equals 0.168 and of the *German Law* dummy equals 0.150. This indicates that ceteris paribus being a French (German) law origin company instead of a common law company increases the share of the largest shareholder by approximately 16.8 (15.0) percentage points. These values correspond roughly to the reported mean values in Table 3 that show a difference between common law and French (German) law of 20.7 (17.1) percentage points. Interestingly, the coefficient of the *Scandinavian Law* dummy is 0.014 and thus considerably smaller than the coefficient of French and German law regimes. Moreover it is significant only at the 10 percent level.

In the remaining models we alter our empirical proxies for the overall ownership concentration. Specifically, in Models 1−3 we use *L3Block*, the cumulated share of the three largest shareholders. In Models 7−9 we use FreeFloat. FreeFloat defined as the fraction of shares not in the hand of blockholders, and finally in Models 10−12 the Herfindahl index *HerfInd*. Using these alternative measures of ownership concentration confirms the results from the univariate analysis in Table 3 and the regression results from Models 1−3: Higher levels of shareholder protection are associated with lower levels of ownership concentration.[9] With regard to the

Table 4. Shareholder Protection and Ownership Concentration of European Listed Firms.

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Method	Pooled OLS			Pooled OLS			Pooled OLS			Pooled OLS		
SE	Clustered by firm			Clustered by firm			Clustered by firm			Clustered by firm		
Dependent Variable	L1			L3			FF			HI		
Asd	−0.181***			−0.158***			0.130***			−0.142***		
	[−16.10]			[−13.45]			[10.38]			[−15.97]		
rAdri		−0.057***			−0.048***			0.040***			−0.042***	
		[−16.55]			[−13.89]			[11.03]			[−15.33]	
French Law			0.168***			0.153***			−0.136***			0.133***
			[20.67]			[18.52]			[−15.69]			[19.53]
German Law			0.150***			0.132***			−0.108***			0.116***
			[16.58]			[14.50]			[−11.22]			[15.32]
Scandinavian Law			0.014*			0.005			0.008			0.007
			[1.87]			[0.62]			[0.86]			[1.38]
Risk	−0.110***	−0.093***	−0.100***	−0.161***	−0.146***	−0.151***	0.202***	0.190***	0.193***	−0.078***	−0.065**	−0.070***
	[−3.58]	[−3.02]	[−3.43]	[−5.14]	[−4.67]	[−5.06]	[6.16]	[5.79]	[6.11]	[−2.76]	[−2.30]	[−2.58]
Size	−0.012***	−0.012***	−0.014***	−0.020***	−0.020***	−0.022***	0.025***	0.025***	0.027***	−0.009***	−0.009***	−0.011***
	[−7.59]	[−7.53]	[−9.20]	[−12.61]	[−12.50]	[−14.37]	[15.03]	[14.92]	[16.78]	[−7.22]	[−7.02]	[−8.71]
Lev	−0.014	−0.019	−0.008	0.004	0	0.01	−0.013	−0.009	−0.018	−0.027*	−0.030**	−0.022
	[−0.79]	[−1.12]	[−0.46]	[0.26]	[0.01]	[0.62]	[−0.73]	[−0.52]	[−1.07]	[−1.77]	[−1.99]	[−1.50]
Growth	−0.006***	−0.007***	−0.005***	−0.007***	−0.007***	−0.005***	0.006***	0.007***	0.005**	−0.005***	−0.006***	−0.004***
	[−3.79]	[−4.23]	[−2.97]	[−3.66]	[−4.04]	[−2.94]	[3.02]	[3.31]	[2.40]	[−3.52]	[−3.92]	[−2.77]
StockTraded	−0.014***	−0.006	−0.002	−0.008*	−0.002	0.003	0	−0.005	−0.010**	−0.014***	−0.009***	−0.004
	[−3.30]	[−1.44]	[−0.44]	[−1.80]	[−0.47]	[0.72]	[0.06]	[−1.08]	[−2.16]	[−3.88]	[−2.75]	[−1.21]

McapListed	−0.061***	−0.069***	−0.052***	−0.074***	−0.081***	−0.066***	0.082***	0.087***	0.073***	−0.044***	−0.050***	−0.036***
	[−8.23]	[−9.51]	[−7.08]	[−10.01]	[−11.15]	[−8.90]	[10.67]	[11.61]	[9.59]	[−7.13]	[−8.22]	[−5.90]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Years	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646
Firms	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073
Adjusted R^2	0.267	0.271	0.316	0.356	0.357	0.392	0.346	0.347	0.376	0.178	0.177	0.228

Notes: This table presents results from pooled OLS regressions explaining ownership concentration in European listed firms. Ownership concentration is proxied by four different measures: the share of the largest shareholder (*L1Block*) in Models 1−3, the cumulated share of the three largest shareholders (*L3Block*) in Models 4−6, the freefloat (*FreeFloat*) in Models 7−9, and the Herfindahl index (*HerfInd*), which is defined as the sum of squared blockholdings, in Model 10−12. Ownership variables reflect all investors owning at least 5 percent the firm's common equity, that is, blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006). Our sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999−2008. For each dependent variable we examine three measures of shareholder protection: the anti-self-dealing index and the revised antidirector rights index of Djankov et al. (2008) and the legal origin as reported by La Porta et al. (1997). All variables are explained in Appendix C. All models control for industry and year fixed effects using industry and year indicator variables, and allow standard errors to cluster at the firm level (Petersen, 2009). Corresponding *t*-values are reported in brackets below the coefficients.
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

firm-specific control variables we find that *Risk*, *Size*, *Growth*, and *McapListed* are negatively associated with ownership concentration, that is, small firms with low risk and limited growth opportunities tend to have concentrated ownership structures. Also, firms listed in countries with less developed capital markets seem to have more concentrated ownership structures.

Overall the findings reported in Table 4 provide strong evidence that there is a negative association between the level of shareholder protection and the level of ownership concentration. The effect turns out to be robust against different measures of shareholder protection and various measures of ownership concentration. As such, our results confirm earlier empirical evidence, which analyzed the relationship using country averages of ownership concentration (La Porta et al., 1999; La Porta et al., 1998; Roe, 2006; Stulz, 2005). However, our results contrast the findings of Holderness (2012), who argues that the use of firm-specific data leads to omitted-variable and aggregation biases which in the end cause the impact of shareholder protection to turn out insignificant or even positive.

Shareholder Protection and Concentration of Different Investor Types

In the second step, we are interested in whether the effect of shareholder protection is homogeneous across different types of shareholders. Therefore, we estimate versions of our empirical model defined in Eq. (1) explaining the cumulated ownership stake of strategic blockholders (*Strategic*) and institutional blockholders (*Institutional*). Moreover, the latter is further disentangled into all the cumulated ownership stake of independent institutional investors (*Independent*) and grey institutional blockholders (*Grey*). The results are reported in Table 5.

Strategic versus Institutional Investors

The impact of shareholder protection on ownership concentration of strategic investors is examined in Models 1–3 of Table 5. In Models 1 and 2 the coefficients of interest (referring to *Asd* and *rAdri*) are both negative and highly significant. This suggests that blockholdings of strategic investors emerge (or survive) in case of limited minority protection.[10] Model 3 confirms these findings in that strategic investors block ownership is significantly lower in common law countries than in civil law countries.

Models 4–6 in Table 5 then examine the impact of shareholder protection on ownership concentration of institutional investors. In contrast to

the analysis of strategic investors, the coefficients of interest in Models 4 and 5 are positive and highly significant. This suggests that institutional block owners are attracted by high levels of shareholder protection.[11] This is confirmed by our findings that common law regimes have a higher cumulated share of institutional blockholders.

Differentiating Independent and Grey Institutional Investors

So far, we aggregated all types of institutional investors. The literature, however, argues that there are (at least) two types of institutional investors (Ferreira & Matos, 2008): (i) independent institutions, which are investors that (due to their business model) are only interested in security returns, and (ii) grey institutions, which are institutions with a wider business model such that these investors might be interested in private benefits (e.g., ongoing (or potential) business relationships to the firm and its management).

In Models 7−12 of Table 5 we examine the impact of shareholder protection on the cumulated ownership stake of these two groups of investors. Examining blockholdings of independent institutionals (*Independent*) in Models 7−9 provides evidence in line with the overall blockholdings of institutional investors. Specially, the coefficients of interest in Models 7 and 8, which are positive and highly significant, suggest that independent institutionals are attracted by high levels of shareholder protection.[12]

In contrast, examining blockholdings of grey institutionals (*Grey*) in Models 10−12 provides evidence in line with the overall blockholdings of strategic investors. Specially, the coefficients of interest in Models 7 and 8, which are negatively and highly significant, suggest that blockholdings of grey institutionals emerge (or survive) in case of low levels of shareholder protection.[13]

Overall, the results presented in Table 5 show that shareholder protection has negative impact on the cumulated shareholdings held by strategic investors as well as their institutional counterpart grey institutional investors. Given the fact that the cumulated ownership of strategic investors represents three-fourths of all block ownership, it does not come at a big surprise that this is in line with the effect of shareholder protection on overall ownership concentration. However, we find a positive and thus opposite effect of shareholder protection on the cumulated share of institutional blockholders, specifically, independent institutions. The latter finding is consistent with similar evidence provided by Donghui et al. (2006) and Ferreira and Matos (2008). Arguing that (independent) institutional investors are more interested in security returns and less able to enjoy private

Table 5. Shareholder Protection and Ownership Stakes Held by Different Investor Types.

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Method	Pooled OLS			Pooled OLS			Pooled OLS			Pooled OLS		
SE	Clustered by firm			Clustered by firm			Clustered by firm			Clustered by firm		
Dependent Variable	Strategic			Institutional			Independent			Grey		
Asd	−0.237***			0.107***			0.116***			−0.008***		
	[−16.78]			[14.38]			[16.06]			[−5.47]		
rAdri		−0.070***			0.030***			0.032***			−0.002***	
		[−16.47]			[13.52]			[15.35]			[−2.98]	
French Law			0.222***			−0.085***			−0.089***			0.003***
			[22.94]			[−16.89]			[−18.13]			[3.41]
German Law			0.192***			−0.084***			−0.091***			0.006***
			[18.06]			[−15.80]			[−18.13]			[4.64]
Scandinavian Law			0.034***			−0.041***			−0.049***			0.007***
			[3.27]			[−7.23]			[−8.64]			[6.91]
Risk	−0.149***	−0.128***	−0.133***	−0.055***	−0.064***	−0.061***	−0.047***	−0.057***	−0.053***	−0.008*	−0.007*	−0.008*
	[−4.30]	[−3.70]	[−4.05]	[−3.49]	[−4.09]	[−3.87]	[−3.14]	[−3.80]	[−3.54]	[−1.91]	[−1.80]	[−1.93]
Size	−0.027***	−0.027***	−0.029***	0.001*	0.001	0.002***	0.002**	0.002**	0.002***	−0.000***	−0.000***	−0.000***
	[−14.74]	[−14.40]	[−16.86]	[1.90]	[1.59]	[2.70]	[2.37]	[2.02]	[3.15]	[−3.02]	[−2.66]	[−2.67]
Lev	0.014	0.009	0.019	−0.001	0.001	−0.001	−0.001	0.001	−0.001	0	0	−0.001
	[0.70]	[0.43]	[1.00]	[−0.11]	[0.09]	[−0.06]	[−0.15]	[0.07]	[−0.07]	[−0.10]	[−0.12]	[−0.23]
Growth	−0.004*	−0.005**	−0.002	−0.002**	−0.002	−0.003**	−0.002*	−0.002	−0.003**	0	0	0
	[−1.77]	[−2.31]	[−0.88]	[−2.00]	[−1.57]	[−2.43]	[−1.92]	[−1.45]	[−2.34]	[−1.22]	[−1.51]	[−1.39]

StockTraded	−0.013**	−0.006	0.004	0.013***	0.011***	0.007***	0.012***	0.009***	0.006**	0.001***	0.001**	0.001***
	[−2.52]	[−1.16]	[0.69]	[5.69]	[4.50]	[3.10]	[5.17]	[3.96]	[2.51]	[3.25]	[2.47]	[3.20]
McapListed	−0.088***	−0.098***	−0.076***	0.006*	0.010***	0.003	0.003	0.008**	0	0.002*	0.002*	0.002*
	[−10.24]	[−11.59]	[−8.98]	[1.74]	[2.93]	[0.87]	[1.08]	[2.48]	[0.16]	[1.94]	[1.72]	[1.82]
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Years	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646	26,646
Firms	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073	4,073
Adjusted R^2	0.291	0.29	0.343	0.127	0.123	0.144	0.131	0.126	0.148	0.014	0.012	0.017

Notes: This table presents results from pooled OLS regressions explaining cumulated ownership stakes held by different investor types in European listed firms. We differentiate four different investor types. In Models 1−3 we examine the cumulated share of all strategic blockholders (*Strategic*). We classify all non-institutional investors as strategic investors and consider investors owning at least 5 percent the firm's common equity, that is, blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006). In Models 4−6 we examine the cumulated ownership stake of institutional blockholders (*Institutional*). Institutional investors are defined as professional money managers which have discretionary control over assets under management. This category includes, for example, banks, insurance companies, mutual fund companies, investment advisors, endowment funds, foundations, and pension funds. In Models 7−9 we examine the cumulated ownership stake of independent institutional blockholders (*Independent*). Independent institutional investors are institutions that are characterized as pressure-resistant. These include investment managers and mutual funds. In Models 10−12 we examine the cumulated ownership stake of grey institutional blockholders (*Grey*), which represents the cumulated blockholdings of institutions that are characterized as pressure-sensitive. These include bank trusts, insurance companies and other institutions. Our sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999−2008. For each dependent variable we examine three measures of shareholder protection: the anti-self-dealing index and the revised antidirector rights index of Djankov et al. (2008) and the legal origin as reported by La Porta et al. (1997). All variables are explained in Appendix C. All models control for industry and year fixed effects using industry and year indicator variables, and allow standard errors to cluster at the firm level (Petersen, 2009). Corresponding *t*-values are reported in brackets below the coefficients.
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

benefits, this provides first evidence in favor of the complementary view of ownership concentration.

Finally, note that the economic effects of our findings are quite impressive. Fig. 2 provides additional information and illustrates the absolute impact of a one unit change of the revised antidirector rights index on the selected ownership measures of an average European firm. The figure reports analogue results for the impact of the anti-self-dealing index.

Robustness Tests

To ensure the validity of our analysis, we challenge our results by selected robustness tests. Specifically, we address the following issues: sample selection process, restricted variable problem, standard error estimation procedure, and the definition of the variable of interest. We find consistent evidence that our results are unaffected by these issues.[14]

Sample Selection Issues

As a first robustness test we check whether our results are driven by the large number of UK firms which constitute approximately 30 percent of the total number of our sample firms. For this purpose we exclude all UK firms (all firms from the Anglo-Saxon area, i.e., UK and Ireland) from our sample and re-estimate the regressions. Our results remain robust to these alternative specifications.

As an additional robustness check we restrict our analysis to temporal subsamples. While our initial sample covers the 1999−2008 period, the revised antidirector rights index and the anti-self-dealing index are static measures based on legal rules that were in force in 2003. Thus, our index values might represent imperfect proxies for actual shareholder protection over our sample period. Thus, we re-estimate our all models restricting the sample to 2003 only. Again, our results remain robust to these alternative specifications.

Restricted variable issue: Our measures of ownership concentration are (by definition) restricted between 0 and 1. Thus, coefficients (and *t*-values) obtained from linear models might be biased. Accordingly, we re-estimate all specifications using Tobit regression methods. These alternative specifications support our initial results.

Standard error estimation procedure: Following Petersen (2009) we use standard errors clustered by firm in combination with year fixed effects in our base-case regressions. Doing so, we account both for time-series and

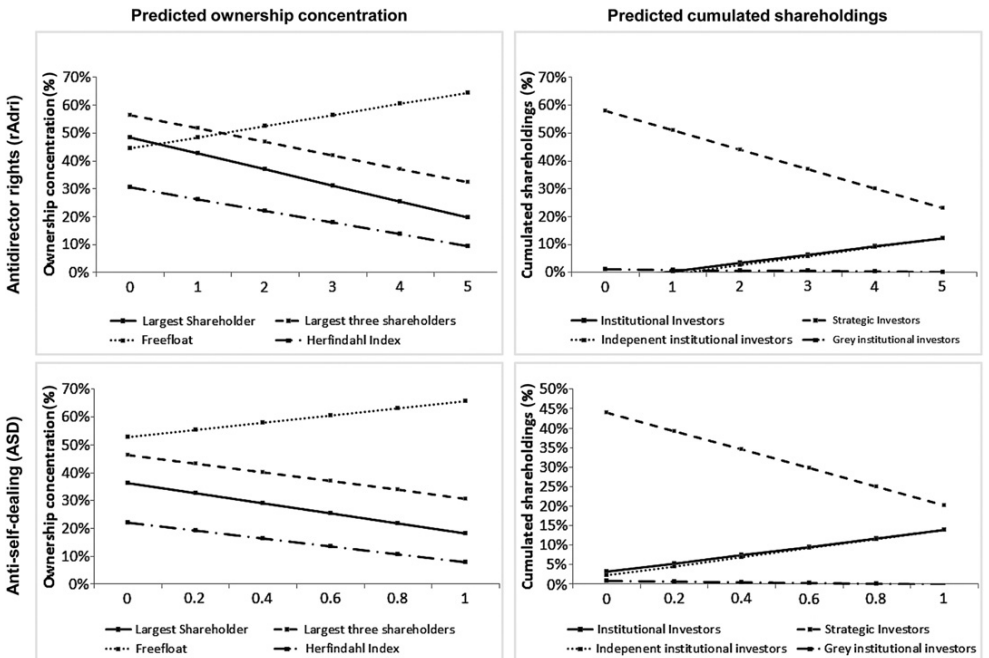

Fig. 2. Predicted Values of Selected Ownership Variables. *Notes*: The figure illustrates the economic significance of the effects of shareholder protection on the ownership structure of an average European firm. Each of the four graphs shows the predicted values of selected ownership values for alternative values of shareholder protection. All other variables are held at the sample mean. In the upper two graphs we use the revised antidirector rights (*rAdri*) index as a measure of shareholder protection. The lower two graphs employ the anti-self-dealing index. The two graphs on the right side report the predicted values for different ownership concentration measures. The predicted values are based on the results presented in Table 4. The two graphs on the right hand side illustrate the predicted values of the cumulated ownership stakes held by different types of investors. The results are based on the regression results as reported in Table 5.

cross-sectional correlation. In an alternative specification, we follow Holderness (2012) and allow for clustering of standard errors by country. Simultaneously, we allow for clustering across time, that is, two-dimensional clustering (Cameron, Gelbach, & Miller, 2006; Thompson, 2011). In a third specification, we re-estimate our basic models using Fama-MacBeth regression method. Our results turn out to be insensitive to these variations.

Definition of the variable of interest: In an additional robustness test we examine whether our results are sensitive to the definition of the variables of interest. Therefore, we extend our initial measures of shareholder protection by the perceived quality of enforcement as measured by rule of law index (*Rol*) as reported by Kaufmann et al. (2009). The motivation for this new index is that while the shareholder protection indices measure the degree of shareholder protection by law, the rule of law index measures the perceived quality of enforcement of these laws. A joint index combines both aspects in one figure by multiplying the two initial indexes. Again, our results turn out to be insensitive to these variations.

Further controls: In a final robustness test, we complement our baseline regressions with several additional firm- and country-specific control variables. For instance, we add *dStockprice*, *LifeCycle*, *IntAcc* as additional firm controls and *Cri*, *LawEnforcement*, *Tax*, *InstAssets* as additional country-level controls (see Appendix C for a definition of all variables). Again, our results turn out to be insensitive to these variations.

To summarize, all our robustness tests confirm our initial results reported in the main section. Specifically, they support our first finding that shareholder protection and ownership concentration are negatively correlated. Moreover they back up the second finding that the cumulated shareholdings of strategic investors (institutional investors) are negatively (positively) correlated with shareholder protection.

REGULATION, OWNERSHIP STRUCTURE, AND FIRM PERFORMANCE

We argued that two opposing lines of arguments may support the negative association between legal protection of outside shareholders and ownership concentration. While the substitution view argues that limited shareholder protection increases the scope for moral hazard in firms and large blockholders are required to alleviate the problem, the complementary view

argues that weak legal constraints allow blockholders to collude with the management in order to appropriate corporate resources. Evidently, the two views have different implications for firm performance: Under the substitution view, we expect ownership concentration to affect firm performance positively (and vice versa) under the complementary view. Thus, to disentangle the two views we now examine the effect of ownership concentration on firm performance.

Empirical Design

In order to examine the effect of ownership concentration on firm performance, we regress firm value on ownership concentration of different ownership types. Firm value is generally considered to represent an aggregate proxy for firm performance and Tobin's Q represents a generally accepted measure for firm value. Thereby, we concentrate on two investor types: strategic investors and independent institutional investors.[15]

Following Ferreira and Matos (2008) and others we thus estimate different specifications of the following empirical model:

$$FV_{i,t} = \alpha + \beta \times OC_{i,t-1} + \Phi \times \Sigma_{i,t-1} + \varepsilon_{i,t} \tag{2}$$

where $FV_{i,t}$ denotes the value of firm i in year t, $OC_{i,t-1}$ denotes the ownership concentration of a specific investor type in firm i and year $t-1$. Moreover, $\Sigma_{i,t-1}$ is a vector of firm-, time-, and country-specific control variables that include among others size (*Size*), growth opportunities (*Growth*), leverage (*Leverage*), measures of stock market development (*McapListed* and *StockTraded*), as well as measures of shareholder protection. Furthermore, we include year dummies and the industry-median firm value (*Global TobQ*) to account for macroeconomic and industry trends following Doidge, Karolyi, and Stulz (2004) and Ferreira and Matos (2008) and others. Again, all (time-dependent) right hand side variables are lagged one period.

We calculate Tobin's Q by the market value of total assets divided by the book value of total assets, where the nominator is calculated as the book value of total assets less the book value of equity plus the market value of equity (Himmelberg, Hubbard, & Palia, 1999). Facing some well-known problems with such an empirical Tobin's Q (Gompers, Ishii, & Metrick, 2010), we carefully account for them in the regression analysis.

First, instead of using Tobin's Q directly, we use *lnTobQ*, the logarithmic transformation of Tobin's Q as our empirical proxy for firm performance. We do so for two reasons. On the one hand, using *lnTobQ* allows us to examine relative (instead of absolute) effects in linear regression models, which is consistent with our aim to examine ceteris-paribus effects of ownership structures. On the other hand, using *lnTobQ* allows us to account for some empirical concerns about using standard Tobin's Q as a proxy for firm value (Gompers et al., 2010).

Second, we use various regression methods to examine the effect of ownership concentration on firm performance. In the first step, we use median and Fama-MacBeth regression analysis. The median regression is a particular case of the category of quantile regression models. While OLS regression estimates the mean of a dependent variable (conditional on the values of the independent variables), the median regression approach estimates the median of a dependent variable (again, conditional on the values of the independent variables). More specifically, the median regression minimizes the sum of the absolute residuals while the OLS approach minimizes the sum of least squares. Thus, the median regression is more robust than the standard OLS regression (Huber, 1981). The Fama-MacBeth regression estimates a separate cross-sectional regression for each of the sample years and reports the average of the resulting coefficients. In a second step, we follow Ferreira and Matos (2008) and use a three-stage least squares (3SLS) simultaneous equation approach to account for endogeneity concerns of ownership structures.[16]

Finally, we run all regressions on (i) the overall sample, (ii) the subsample of all firms from countries with high shareholder protection, and (iii) the subsample of all firms from countries with low shareholder protection. Thereby, we stick to the now-classical rule proposed by La Porta, López-de-Silanes, Shleifer, and Vishny (2000) that the (country) median of the (revised) antidirector rights index separates countries into high and low protection countries.[17]

Empirical Results

The empirical results of Model (2) using median and Fama-MacBeth regression analysis are reported in Table 6. We examine the effect of cumulated strategic blockholdings in columns 1−3 and 7−9 and find a negative effect on firm value. The effect is statistically significant on the overall sample (columns 1 and 7). However, differentiating between high and low

Table 6. Ownership Concentration by Investor Types and Firm Performance.

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Dependent Variable	LnTobQ			LnTobQ			LnTobQ			LnTobQ		
Method	Median Regression			Median Regression			Fama-MacBeth Regression			Fama-MacBeth Regression		
Sample Countries	All	Low Protection	High Protection	All	Low Protection	High Protection	All	Low Protection	High Protection	All	Low Protection	High Protection
Strategic	−0.075***	−0.092***	−0.018				−0.078***	−0.091***	−0.029			
	[−7.70]	[−8.05]	[−0.80]				[−3.89]	[−4.18]	[−1.72]			
Independent				0.038**	0.106***	−0.060*				0.049*	0.114**	−0.014
				[1.97]	[4.12]	[−1.72]				[2.00]	[2.79]	[−0.48]
Size	−0.002	−0.010***	0.018***	0	−0.007***	0.018***	0.009***	0.001	0.026***	0.011***	0.003	0.028***
	[−1.55]	[−6.02]	[6.14]	[0.01]	[−4.39]	[6.32]	[4.31]	[0.16]	[8.93]	[6.49]	[0.98]	[8.59]
Lev	−0.330***	−0.359***	−0.287***	−0.338***	−0.367***	−0.284***	−0.195***	−0.245***	−0.135**	−0.196***	−0.249***	−0.135**
	[−20.06]	[−18.20]	[−8.32]	[−19.88]	[−18.10]	[−7.75]	[−4.72]	[−6.02]	[−2.57]	[−4.74]	[−6.18]	[−2.54]
Growth	0.030***	0.038***	0.017***	0.029***	0.037***	0.014***	0.031*	0.038**	0.017	0.031*	0.040**	0.017
	[9.55]	[8.42]	[3.37]	[9.00]	[8.05]	[2.61]	[2.18]	[2.68]	[1.16]	[2.20]	[2.72]	[1.14]
Roa	0.003***	0.004***	0	0.003***	0.004***	0	0.003***	0.004***	0.002***	0.003***	0.004***	0.002**
	[18.53]	[19.04]	[1.35]	[17.45]	[18.29]	[0.85]	[4.85]	[4.48]	[3.29]	[4.71]	[4.35]	[3.21]
Global TobQ	0.343***	0.313***	0.436***	0.345***	0.324***	0.439***	0.404***	0.386***	0.420***	0.410***	0.394***	0.422***
	[38.98]	[29.81]	[23.44]	[38.05]	[30.09]	[22.19]	[6.53]	[7.10]	[5.00]	[6.59]	[7.12]	[5.06]
StockTraded	0.007	0.041***	−0.025*	0.009	0.044***	−0.02	0.039**	0.104***	0.037	0.045**	0.117***	0.019
	[1.17]	[4.39]	[−1.83]	[1.46]	[4.59]	[−1.38]	[2.47]	[4.17]	[0.93]	[2.73]	[4.34]	[0.57]
McapListed	0.026***	−0.008	0.026	0.032***	0.002	0.03	0.025	−0.034	0.054	0.027	−0.037	0.085
	[3.66]	[−0.76]	[1.09]	[4.28]	[0.18]	[1.19]	[1.51]	[−1.57]	[0.44]	[1.68]	[−1.70]	[0.79]

Table 6. (*Continued*)

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Dependent Variable	LnTobQ			LnTobQ			LnTobQ			LnTobQ		
Method	Median Regression			Median Regression			Fama-MacBeth Regression			Fama-MacBeth Regression		
Sample Countries	All	Low Protection	High Protection	All	Low Protection	High Protection	All	Low Protection	High Protection	All	Low Protection	High Protection
rAdri	0.003	0.002	0.04	0.008**	0.004	0.027	0.00	0.006	−0.044	0.004	0.006	−0.043
	[1.07]	[0.40]	[1.58]	[2.49]	[0.59]	[1.01]	[0.08]	[0.48]	[−1.65]	[0.67]	[0.50]	[−1.69]
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Firm Years	24,471	16,236	8,235	24,471	16,236	8,235	21,897	14,202	7,695	21,897	14,202	7,695
Adjusted R^2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.225	0.242	0.238	0.223	0.239	0.238

Notes: This table presents results from regressions explaining the effect of cumulated shareholdings held by different investor types on firm performance measured by the logarithm of a firm's Tobin's Q (*lnTobQ*). Models 1−6 report results from median regressions. Models 7−12 report Fama-MacBeth regression results. Our sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999−2008. We estimate the various specifications for the aggregate sample as well as for two subsamples. The first subsample includes all firms in low protection countries and the second those firms that are located in high protection countries. The country median of the revised antidirector rights index serves a critical threshold for the classification of high and low protection countries. High protection countries have values larger than the median, whereas low protection countries have values lower than or equal to the median (La Porta et al., 2000). We consider two types of investors. First, *Strategic* represents the cumulated share of all blockholders that are classified as strategic investors, for example, private investors, corporations, and holding companies. Second, *Independent* is defined as the cumulated shareholdings of institutions that are characterized as pressure-resistant. These include investment managers and mutual funds. Ownership variables reflect all investors owning at least 5 percent the firm's common equity, that is, blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006). Models 1−6 control for year fixed effects using year indicator variables. All variables are explained in Appendix C. *t*-values are reported in brackets below the coefficients.
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

protection countries, the effect turns out to be significant only in weak protection countries. We find the same patterns in median regression as well as in Fama-MacBeth regression settings.

The effect of cumulated institutional blockholdings is examined in columns 4−6 and 10−12. Examining the overall sample, we find a (weakly significant) positive effect (columns 4 and 10). When we differentiate between high and low protection countries the effect turns out to be significant only in weak protection countries. Again, the pattern is fairly consistent in the median regression as well as in a Fama-MacBeth regression setting.

We challenge the results in Table 6 by estimating 3SLS-versions of Model (2). Thereby, we use two instruments for the cumulated shareholdings held by the two investor groups: (a) we follow Himmelberg et al. (1999) and use stock price volatility and (b) we follow Brown, Beekes, and Verhoeven (2011) and use the lagged value of the country- and industry-specific median ownership stake held by strategic (*Global Strategic*) and independent institutional investors (*Global Independent*).

The results of the 3SLS regression are reported in Table 7. The effect of cumulated strategic blockholdings is examined in columns 1−6. While we find a significantly negative effect in the overall sample, this effect turns out to be driven by observations from weak protection countries only. The effect of cumulated institutional blockholdings is examined in columns 7−12. We find a significantly positive effect in the overall sample. However, when we split the countries, the effect turns out to be significant only in the weak protection subsample. Overall, the results from Table 7 confirm our initial results from Table 6.

Overall, the results are twofold. First, we find that while institutional blockholders fuel firm value, strategic blockholders jeopardize firm value. With Tobin's Q measuring the pricing behavior of small shareholders, this suggests that small outside shareholders will pay less (more), whenever there are strategic (independent institutional) blockholders engaged in the firm. Second, as expected this effect is particularly pronounced in countries with weak outside shareholder protection. In contrast, in countries with high levels of legal shareholder protection small shareholders seem not to differentiate between firms with or without blockholders.

Robustness Tests

Again, to ensure the validity of our analysis, we challenge our results by selected robustness tests.[18] First, instead of using median regression

Table 7. Ownership Concentration by Investor Types and Firm Performance: 3SLS Regression.

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Method	3 SLS											
Sample Countries	All		Low Protection		High Protection		All		Low Protection		High Protection	
Dependent Variable	lnTobQ	Strategic	lnTobQ	Strategic	lnTobQ	Strategic	lnTobQ	Independent	lnTobQ	Independent	lnTobQ	Independent
Strategic	−0.332***		−0.513***		0.1210							
	[−9.19]		[−11.30]		[1.38]							
Independent							0.517***		1.423***		−0.1530	
							[4.48]		[5.78]		[−0.85]	
lnTobQ		−0.091***		−0.082***		−0.116***		0.0060		0.0030		0.0090
		[−5.37]		[−3.55]		[−4.28]		[0.65]		[0.33]		[0.47]
Size	0.004*	−0.033***	−0.010***	−0.029***	0.036***	−0.041***	0.014***	0.0010	0.003*	0.0000	0.031***	0.003**
	[1.84]	[−33.70]	[−4.32]	[−24.01]	[7.85]	[−24.14]	[8.67]	[1.30]	[1.68]	[0.62]	[10.85]	[2.33]
Lev	−0.209***	−0.0090	−0.268***	−0.040**	−0.172***	0.059***	−0.221***	0.012*	−0.307***	0.031***	−0.166***	−0.023*
	[−10.43]	[−0.69]	[−10.99]	[−2.40]	[−4.62]	[3.11]	[−10.98]	[1.68]	[−11.54]	[3.96]	[−4.51]	[−1.74]
Growth	0.059***	0.0030	0.073***	−0.0020	0.040***	0.0040	0.062***	−0.003*	0.080***	−0.0010	0.039***	−0.0040
	[13.24]	[1.10]	[11.17]	[−0.39]	[6.35]	[1.08]	[13.92]	[−1.67]	[11.84]	[−0.30]	[6.20]	[−1.61]
Cash	0.565***	−0.0140	0.448***	−0.078***	0.683***	0.088***	0.580***	0.016*	0.481***	0.023**	0.687***	0.0120
	[28.56]	[−0.87]	[17.54]	[−3.91]	[20.76]	[3.30]	[29.40]	[1.82]	[18.07]	[2.45]	[20.80]	[0.67]
RoA	0.004***	0.001***	0.005***	0.002***	0.002***	0.001***	0.003***	0.0000	0.004***	0.0000	0.002***	0.0000
	[17.00]	[10.05]	[17.37]	[7.61]	[5.64]	[7.56]	[15.38]	[−0.35]	[14.49]	[0.04]	[6.26]	[0.04]

LifeCycle	−0.027***	0.0000	−0.019***	−0.0010	−0.040***	0.0010	−0.028***	0.0010	−0.021***	0.001**	−0.039***	0.0000
	[−21.58]	[−0.50]	[−11.28]	[−0.68]	[−19.46]	[0.51]	[−22.43]	[1.60]	[−11.98]	[2.11]	[−19.76]	[0.11]
Global TobQ	0.370***		0.354***		0.362***		0.388***		0.385***		0.357***	
	[33.03]		[25.82]		[17.99]		[35.15]		[27.67]		[17.99]	
StockTraded	−0.0080	−0.011***	0.0150	−0.037***	−0.036***	−0.031***	−0.0080	0.009***	0.025*	0.023***	−0.036**	0.016***
	[−1.14]	[−3.00]	[1.25]	[−5.15]	[−2.63]	[−4.60]	[−1.11]	[4.27]	[1.79]	[6.74]	[−2.56]	[3.36]
McapListed	0.032***	−0.012**	−0.0060	0.0040	0.152***	−0.029**	0.061***	−0.0030	0.025*	−0.016***	0.140***	0.036***
	[3.66]	[−2.36]	[−0.48]	[0.48]	[5.34]	[−2.06]	[7.37]	[−0.95]	[1.91]	[−4.56]	[5.32]	[3.86]
SRVOL2_w		−0.119***		−0.199***		−0.0130		−0.0140		0.0140		−0.0080
		[−4.83]		[−6.24]		[−0.31]		[−1.02]		[0.94]		[−0.29]
dStockprice	0.031***	0.005***	0.029***	0.005***	0.033***	0.006***	0.031***	−0.001*	0.028***	0.0000	0.033***	−0.002**
	[41.80]	[6.91]	[30.46]	[5.19]	[26.71]	[4.95]	[41.35]	[−1.89]	[28.41]	[−0.21]	[26.31]	[−2.37]
DivYield	−0.894***	−0.095*	−0.573***	0.139*	−1.289***	−0.533***	−0.893***	0.052*	−0.569***	−0.0550	−1.304***	0.220***
	[−9.90]	[−1.67]	[−5.20]	[1.94]	[−7.76]	[−5.61]	[−9.83]	[1.68]	[−4.94]	[−1.61]	[−7.78]	[3.34]
IntAcc	−0.026***	−0.026***	−0.022**	−0.022***	0.0160	−0.031***	−0.018**	0.0040	−0.0030	−0.0020	0.0160	0.025***
	[−3.07]	[−5.09]	[−2.27]	[−3.62]	[0.79]	[−3.05]	[−2.12]	[1.38]	[−0.30]	[−0.65]	[0.79]	[3.61]
Global Strategic		0.513***		0.476***		0.559***						
		[43.70]		[30.02]		[22.81]						
Global Independent								0.508***		0.369***		0.574***
								[26.89]		[13.91]		[15.95]
rAdri	−0.019***	−0.033***	−0.013*	−0.034***	−0.066**	0.054***	−0.011*	0.019***	−0.017**	0.017***	−0.063**	−0.031***
	[−3.97]	[−13.87]	[−1.77]	[−7.57]	[−2.42]	[4.08]	[−1.95]	[14.33]	[−1.97]	[7.89]	[−2.26]	[−3.40]

Table 7. (*Continued*)

Model No.	1	2	3	4	5	6	7	8	9	10	11	12
Method	3 SLS											
Sample	All		Low Protection		High Protection		All		Low Protection		High Protection	
Countries												
Dependent Variable	lnTobQ	Strategic	lnTobQ	Strategic	lnTobQ	Strategic	lnTobQ	Independent	lnTobQ	Independent	lnTobQ	Independent
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Years	22,160	22,160	14,350	14,350	7,810	7,810	22,160	22,160	14,350	14,350	7,810	7,810
Firms	4,073	0	4,073	0	4,073	0	4,073	0	4,073	0	4,073	0
Adjusted R^2	0.302	0.254	0.266	0.182	0.335	0.162	0.299	0.12	0.203	0.042	0.338	0.058

Notes: This table presents results from 3SLS regressions explaining the effect of cumulated shareholdings held by different investor types on firm performance measured by the logarithm of a firm's Tobin's Q (*lnTobQ*). Our sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999–2008. We consider two types of investors. First, *Strategic* represents the cumulated share of all blockholders that are classified as strategic investors, for example, private investors, corporations, and holding companies. Second, *Independent* is defined as the cumulated shareholdings of institutions that are characterized as pressure-resistant. These include investment managers and mutual funds. Ownership variables reflect all investors owning at least 5 percent the firm's common equity, that is, blockholders in the sense of previous studies such as McConnell and Servaes (1990), Faccio and Lang (2002), Becht and Boehmer (2003), and Donghui et al. (2006). We use two instruments for the cumulated shareholdings held by the two investor groups: (a) we follow Himmelberg et al. (1999) and use stock price volatility and (b) we follow Brown et al. (2011) and use the lagged value of the country- and industry-specific median ownership stake held by strategic (*Global Strategic*) and independent institutional investors (*Global Independent*). We estimate the various specifications for the aggregate sample as well as for two subsamples. The first subsample includes all firms in low protection countries and the second those firms that are located in high protection countries. The country median of the revised antidirector rights index serves a critical threshold for the classification of high and low protection countries. High protection countries have values larger than the median whereas low protection countries have values lower than or equal to the median (La Porta et al., 2000). All variables are explained in Appendix C. All models control for year fixed effects using year indicator variables and *t*-values are reported in brackets below the coefficients.
Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

analysis to estimate Model (2), we estimate a standard OLS regression with standard errors clustered at the firm level (Petersen, 2009). The results confirm our initial findings. Second, we examine alternative measures of firm performance. Instead of examining the effect for *lnTobQ*, we follow Gompers et al. (2010) and also analyze the effect for the negative inverse of Tobin's Q ($-1/Q$) and Tobin's Q itself (*TobQ*). Moreover, we then also examine the effect for the (logarithm of the) market-to-book ratio of equity (*lnMtb*). Again, our initial findings are insensitive to these variations.

Third, we use an alternative approach to split our initial sample. Instead of relying on the (country) median of the revised antidirector rights index (*rAdri*), we use the (country) median of the anti-self-dealing index (*Asd*) to split the sample. The results provide additional evidence that reveals that the effect of shareholder concentration on firm value mainly stems from weak protection countries.

CONCLUSION

Listed equity is an important source of external financing to firms and simultaneously crucially determines the investment universe available to private households. However, who is supplying listed equity to the corporate sector? Understanding the cross-country determinants of ownership structure of listed firms is challenging researchers since quite a while.

Listed equity comes for the benefit of separation of management and risk-taking, but simultaneously for the cost of separation of ownership and control and corresponding agency problems. Blockholders can improve the situation by carefully monitoring the management. However, they also often come for costs, for example, the cost of collusion between large shareholders and the management at the expense of minority shareholders. We argue that the relevance of both effects is a matter of legal (minority) shareholder protection. More precisely, although rather antithetic from their conceptual underpinning, both the value-enhancing monitoring effect as well as the value-destroying expropriation effect of blockholders may become particularly relevant whenever legal protection of minority shareholders is weak.

To examine this hypothesis, we explore a novel data set covering ownership structures of more than 4,000 listed firms in 16 European countries and examine the effects of shareholder protection on ownership concentration. Thereby, we extend the existing literature employing firm-level

regression analyses that account for a broad set of firm- and country-specific characteristics and use the revised versions of legal indices measuring shareholder protection as developed by Djankov et al. (2008). In a first step, we study overall ownership concentration and find supportive evidence for a negative effect of legal shareholder protection on ownership concentration. The results, which are robust against various measures of ownership concentration, turn out to be economically meaningful. For example, a one standard deviation increase of shareholder protection as measured by the revised antidirector rights index is associated with a 19.9 (11.8) percent decrease of the average share of the largest shareholder (largest three shareholders).

In the second step, we differentiate between strategic and institutional investors and find that the negative effect of minority shareholder protection is mainly driven by strategic investors. In contrast, institutional ownership is positively correlated to the level of shareholder protection. In a third step we further differentiate institutional investors. In line with the view that grey institutions basically are similar to strategic investors, we find that the positive effect of shareholder rights on institutional ownership is solely driven by independent institutional investors and shareholdings of grey institutions are actually higher in countries with poor shareholder protection.

Finally, in a fourth step, we elaborate on the rationale for the above empirical findings. Specifically, we examine whether firm valuation is systematically correlated to a firm's ownership structure. Our results suggest that strategic shareholdings on average are detrimental to firm valuation. In contrast, ownership of independent institutionals may improve firm valuation. With Tobin's Q measuring the pricing behavior of small shareholders, this suggests that small outside shareholders will pay less (more), whenever there are strategic (independent institutional) blockholders engaged in the firm. Second, as expected this effect is particularly pronounced in countries with weak outside shareholder protection. In contrast, in countries with high levels of legal shareholder protection small shareholders seem not to differentiate between firms with or without blockholders.

Overall, our results are consistent with the view that (i) high shareholder protection and (ii) limited ownership by strategic investors make small investors and investors interested in security returns only more confident in their investments. We hope that our results contribute to a better understanding of the mechanisms between legal protection, ownership structures, and firm performance.

NOTES

1. Effectively, distinct minority shareholder rights will mask the fundamental economic trade-off of block ownership, which will only realize in countries with limited or even absent legal shareholder protection.

2. The law and finance literature has analyzed the impact of investor protection on many different aspects of corporate finance which include: investment policy (Love, 2003), capital market development (La Porta, López-de-Silanes, Shleifer, & Vishny, 1997; Morck, Yeung, & Yu, 2000; Wurgler, 2000), ownership structure (Claessens, Djankov, & Lang, 2000; Djankov, La Porta, López-de-Silanes, & Shleifer, 2008; La Porta, López-de-Silanes, & Shleifer, 1999; La Porta, López-de-Silanes, Shleifer, & Vishny, 1998), valuation (Doidge, Karolyi, & Stulz, 2004; La Porta, López-de-Silanes, Shleifer, & Vishny, 2002), cash holdings (Dittmar, Mahrt-Smith, & Servaes, 2003; Pinkowitz, Stulz, & Williamson, 2006), expropriation (Johnson, La Porta, López-de-Silanes, & Shleifer, 2000), and finally payout policies (Brockman & Unlu, 2009; Faccio, Lang, & Young, 2001; La Porta, López-de-Silanes, Shleifer, & Vishny, 2000).

3. This behavior, which is commonly observed, leads to the majority-minority shareholder conflict (Johnson et al., 2000). Shleifer and Vishny (1997) provide a comprehensive overview on the literature analyzing the costs of large shareholders. Note that under this view strong blockholders are considered to represent corporate insiders (La Porta et al., 2000).

4. Our sample consists of European firms for various reasons. On the one hand, the European area represents – from the stage of development – a homogeneous economic area. On the other hand, there is substantial heterogeneity in European legislation, which is – at least in parts – attributable to differences in legal origin (La Porta et al., 1998). Moreover, Europe is known for rather heterogeneous ownership structures (Faccio & Lang, 2002). Finally, the analysis of ownership data requires access to reliable data sources (Dlugosz, Fahlenbrach, Gompers, & Metrick, 2006), which is ensured for European firms by homogeneous disclosure rules established by the European Union.

5. Our definition of strategic investors comprises (among others) families, corporations, and individuals.

6. Data reliability is a crucial issue here. Thus, we proceed in two steps. First, Appendix B describes details of two cross-checks that we conduct to ensure the reliability of the data obtained from the Thomson One Banker (TOB) ownership module. Both tests provide convincing evidence that the ownership data is in fact reliable. Second, we screen the existing literature and find that the database is also used by other researchers (Borisova, Brockman, Salas, & Zagorchev, 2012).

7. We choose a uniform threshold for all countries as we want to ensure comparability of ownership structures across sample countries. During the period under observation the disclosure thresholds in our sample countries vary both across time and countries. For example in the United Kingdom the minimum disclosure threshold is 3 percent and in Italy 2 percent. The minimum disclosure threshold in Germany is 5 percent before 2007 and 3 percent afterward. In order to harmonize the disclosure rules across its member states, the European Union has taken several initiatives. The most prominent ones are the Transparency Directives 88/627/EEC

of 1988 and 2004/109/EG of 2004. The latter prescribes a uniform disclosure threshold of 5 percent.

8. We use various sources to solve data problems, e.g., Bureau van Dijk's Amadeus database, data from the national financial service authorities, corporate annual reports and finally web research.

9. Interestingly in Models 6, 9, and 12 the *Scandinavian Law* dummy is not significantly different from zero.

10. Again, the economic effect is substantial. A one standard deviation increase of the anti-self-dealing index (revised antidirector rights index) results in a decrease of the cumulated strategic shareholdings by 20.5 (20.5) percent.

11. Again, the economic effect is considerable. A one standard deviation surge of the anti-self-dealing index (revised antidirector rights index) results in an increase of the cumulated institutional shareholdings by 33.0 (31.5) percent.

12. The economic effects are substantial. An increase of the anti-self-dealing index (revised antidirector rights index) by a one standard deviation results in an increase of the cumulated shareholdings owned by independent institutionals by 37.8 (35.7) percent.

13. Again, the economic effect is quite considerable: A one standard deviation surge of the anti-self-dealing index (revised antidirector rights index) results in a decrease of the cumulated shareholdings held by grey institutionals by 18.4 (19.9) percent.

14. We provide the results of these tests in an internet appendix to this paper available at http://dx.doi.org/10.2139/ssrn.1963336

15. We use independent institutionals and not all institutionals since the latter include grey institutionals that may face conflicts of interests.

16. Ownership variables are most likely endogenous to firm value (Himmelberg, Hubbard, & Palia, 1999) and the literature has proposed several approaches to overcome this problem. For instance, Himmelberg et al. (1999) argue for the use of panel data regression with firm-fixed effects. That approach, however, is criticized by Zhou (2001) who points out that rarely changing (and noisy to measure) ownership data makes it difficult to find a potential effect of ownership on performance.

17. Using the anti-self-dealing index to classify the countries gives equivalent results.

18. We provide the results of these tests in an internet appendix to this paper available at http://dx.doi.org/10.2139/ssrn.1963336

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APPENDIX A: SAMPLE COMPOSITION

Below we report the sample composition along three dimensions. In Panel A, we address the geographic distribution of the sample firms by country and law family and present the country-specific values of the anti-self-dealing index (*Asd*) and the revised antidirector rights (*rAdri*) as both reported by Djankov et al. (2008). The sample countries originate from all four law families. Among the 16 sample countries, there are two with common law origin, eight with French, three with German, and four with Scandinavian law origin. The largest number of sample firms is contributed by UK (1,236), followed by France (778) and Germany (474). The level of shareholder protection (as measured by *Asd* and *rAdri*) varies across countries and law families. Consistent with La Porta et al. (1998), shareholder protection is highest in common law sample countries.

In Panel B, we report the distribution of firms by year. From 1999 onward the number of sample firms increases significantly to the level of 2,549 firms in 2001 and then declines in the following two years. A possible explanation for this development is the large number of new listings during the internet boom and the succeeding economic downturn. From 2004 onward the number of firms increases again and reaches a peak of 3,197 firms in 2007. A possible explanation for this trend can be found in the economic recovery and the improved prospects for new listings. In Panel C, we present the distribution of sample firms by industry. The sample reflects broad industry coverage. All industries include at least 100 firms. The three largest industries in the sample are business equipment (805), manufacturing (607), and wholesale (536).

Table A1. Sample Composition.

Panel A: Geographic Distribution

Country	Number of Firms	Asd	rAdri
Ireland	54	0.789	5.00
UK	1,236	0.950	5.00
English law origin	*1,290*	*0.869*	*5.00*
COMMON LAW	*1,290*	*0.869*	*5.00*
Belgium	120	0.544	3.00
France	778	0.379	3.50
Italy	255	0.421	2.00

Table A1. (*Continued*)

Panel A: Geographic Distribution

Country	Number of Firms	Asd	rAdri
Luxembourg	25	0.283	2.00
The Netherlands	122	0.203	2.50
Portugal	64	0.444	2.50
Spain	97	0.374	5.00
French law origin	*1,461*	*0.379*	*2.50*
Austria	65	0.213	2.50
Germany	474	0.282	3.50
Switzerland	154	0.267	3.00
German law origin	*693*	*0.267*	*3.00*
Denmark	104	0.463	4.00
Finland	118	0.457	3.50
Norway	135	0.421	3.50
Sweden	272	0.333	3.50
Scandinavian law origin	*629*	*0.439*	*3.50*
CIVIL LAW	*2,783*	*0.376*	*3.25*

Panel B: Temporary Distribution

Year	Law Origin				Total
	English	French	German	Scandinavian	
1999	559	789	382	317	2,047
2000	616	900	484	382	2,382
2001	651	993	513	392	2,549
2002	646	972	495	426	2,539
2003	664	925	483	412	2,484
2004	662	934	494	430	2,520
2005	820	960	532	459	2,771
2006	936	1,036	563	502	3,037
2007	1,009	1,068	575	545	3,197
2008	994	1,012	564	550	3,120
Total	*7,557*	*9,589*	*5,085*	*4,415*	*26,646*

Table A1. (*Continued*)

Panel C: Distribution by Industry

Industry	Law Origin				Total
	English	French	German	Scandinavian	
Consumer non-durables	100	168	46	51	365
Consumer durables	30	49	25	18	122
Manufacturing	121	218	148	120	607
Energy	65	18	2	23	108
Chemicals and allied products	32	47	27	10	116
Business equipment	225	275	170	135	805
Telecommunications	43	60	23	16	142
Wholesale, retail	176	219	79	62	536
Healthcare medical equipment and drugs	81	73	49	44	247
Other	417	334	124	150	1,025
Total	*1,290*	*1,461*	*693*	*629*	*4,073*

Notes: This table presents the sample composition from three perspectives. The sample covers 4,073 publicly listed firms from 16 European countries. Data is collected for the period 1999–2008. Panel A presents the number of firms by country and countries are clustered by legal origin. The country-specific values of *Asd* and *rAdri* are de facto values as reported in Djankov et al. (2008). However, values of *Asd* and *rAdri* for the superordinate legal systems are mean values. Panel B reports the number of firms by year and legal origin. Panel C provides the number of firms by industry and legal origin. *Asd* and *rAdri* are defined in detail in Appendix C.

APPENDIX B: CROSS-CHECK OF TOB OWNERSHIP DATA

We challenge the ownership data provided by the Thomson One Banker (TOB) ownership module in two steps. First, we carefully compare a randomly selected sample of firm-year observations with information from other data sources (e.g., annual reports, Bureau van Dijk's Amadeus database, and national data providers like Hoppenstedt Aktienführer). We find that the Thomson data nicely matches the data from other sources.

Second, we compare the data with the well-established measure of ownership concentration *CloselyheldPCT[WS]* provided by Thomson/Reuters Worldscope and used in several other studies (Thomsen, Pedersen, & Kvist, 2006). Worldscope defines *CloselyheldPCT[WS]* as (Number of Closely Held Shares/Common Shares Outstanding) × 100, where Closely Held Shares represents shares held by insiders, which includes (but is not restricted to) (i) shares held by officers, directors and their immediate families, (ii) shares held in trust, (iii) shares of the company held by any other corporation (except shares held in a fiduciary capacity by banks or other financial institutions), (iv) shares held by pension/benefit plans, and (v) shares held by individuals who hold 5 percent or more of the outstanding shares (see Thomson Financial, 2007). The results of the second test are reported in Table B1.

In sum, both cross-checks provide convincing evidence that the ownership data provided by the Thomson One Banker (TOB) ownership module is reliable.

Table B1. Coefficients of Correlation for Various Measures of Ownership Concentration.

	CloselyheldPCT[WS]	Strategic	Institutional	L1Block	L3Block	FreeFloat
CloselyheldPCT[WS]	100%					
	(−)					
Strategic	87.14%***	100%				
	(0.00)	(−)				
Institutional	−16.62%***	−24.89%***	100%			
	(0.00)	(0.00)	(−)			
L1Block	86.44%***	93.18%***	−14.68%***	100%		
	(0.00)	(0.00)	(0.00)	(−)		
L3Block	87.38%***	97.81%***	−8%	95.09%***	100%	
	(0.00)	(0.00)	(0.19)	(0.00)	(−)	
FreeFloat	−85.77%***	−96.96%***	0%	−92.49%***	−99.09%***	100%
	(0.00)	(0.00)	(0.79)	(0.00)	(0.00)	(−)

Notes: This table reports the coefficients of correlation (and corresponding *p*-values) for various measures of ownership concentration. *CloselyheldPCT[WS]* represents the well-established measure of ownership concentration provided by Thomson/Reuters Worldscope and used in several other studies (Thomsen et al., 2006). With the exception of *Closelyheld[WS]* all variables are explained in Appendix C.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

APPENDIX C: VARIABLE DESCRIPTION

This appendix provides a detailed overview of the variables and their definition. Thomson One Banker is the primary source for the ownership information. The source of the other variables is reported along with the definition of the according variables.

Ownership Variables

L1Block: Share of the largest blockholder. The term blockholder refers to investors with a share of at least 5 percent.

L3Block: Cumulated share of the three largest blockholders.

FreeFloat: Freefloat defined as the cumulated share of all non-blockholders.

HerfInd: Herfindahl index, defined as the sum of squared blockholdings.

Strategic: Cumulated share of all blockholders that are classified as strategic investors, that is, corporations and holding companies.

Institutional: Cumulated share of all institutional blockholders. Institutional blockholders are defined as professional money managers which have discretionary control over assets under management. This category includes, for example, banks, insurance companies, mutual fund companies, investment advisors, endowment funds, foundations, and pension funds.

Independent: Cumulated shareholdings of institutions that are characterized as pressure-resistant. These include investment managers and mutual funds.

Grey: Cumulated shareholdings of institutions that are characterized as pressure-sensitive. These include bank trusts, insurance companies, other institutions, pension funds, or endowments.

Global Strategic: European industry median of *Strategic* which is defined as the cumulated share of all blockholders that are classified as strategic investors, that is, corporations and holding companies. Calculated annually and separately for each firm. The firm itself is not included in the calculation of the European industry median.

Global Independent: European industry median of *Independent*, that is, the cumulated shareholdings of institutions that are characterized as pressure-resistant. Calculated on a yearly base. Calculated separately for each firm. The firm itself is not included in the calculation of the European industry median.

Measures of Regulation and Shareholder Protection

Asd: Anti-self-dealing index. Proxy for shareholder protection. Measured as the average of the ex-ante and ex-post private control index of self-dealing. The index ranges from zero to one. *Source*: Djankov et al. (2008).

rAdri: Revised antidirector rights index. Proxy for shareholder protection. "The index of antidirector rights is calculated by adding one when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting is less than or equal to 10 percent (the sample median); (6) or when shareholders have preemptive rights that can only be waived by a shareholders meeting." The index ranges from zero to six. *Source*: Djankov et al. (2008).

Common Law: Indicator for common law origin. Equals one, if the origin of the commercial law of a country is English Common Law and zero otherwise. *Source*: La Porta et al. (1998).

Civil Law: Indicator for civil law origin. Equals one, if the Company Law or Commercial Code of the country originates in Roman Law and zero otherwise. *Source*: La Porta et al. (1998).

UK Law: Indicator for English common law origin. Equals one, if the origin of the commercial law is the English common law and zero otherwise. *Source*: La Porta et al. (1998).

Scandinavian Law: Indicator for Scandinavian civil law origin. Equals one, if the origin of the commercial law is the Scandinavian Civil Code and zero otherwise. *Source*: La Porta et al. (1998).

German Law: Indicator for German civil law origin. Equals one, if the origin of the commercial law is the German Civil Code and zero otherwise. *Source*: La Porta et al. (1998).

French Law: Indicator for French civil law origin. Equals one if the origin of the commercial law is the French Civil Code and zero otherwise. *Source*: La Porta et al. (1998).

VoiceAcc: Index "capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media." *Source*: Kaufmann et al. (2009).

PolitStab: Index "capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism." *Source*: Kaufmann et al. (2009).

GovEff: Index "capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies." *Source*: Kaufmann et al. (2009).

RegQual: Index "capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development." *Source*: Kaufmann et al. (2009).

RoI: Index "capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." *Source*: Kaufmann et al. (2009).

CorrContr: Index "capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests." *Source*: Kaufmann et al. (2009).

LawEnforcement: "Logarithm of the length (in calendar days) of the judicial procedure to collect on a bounced check." *Source*: Djankov et al. (2008).

Cri: Creditor rights index that measures the country-specific strength of the creditor's legal rights in case that a debtor defaults. The index aggregates

different creditor rights. "The index is formed by adding 1 when: (1) the country imposes restrictions, such as creditors' consent or minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm; and (4) the debtor does not retain the administration of its property pending the resolution of the reorganization. The index ranges from 0 to 4." *Source*: La Porta et al. (1998).

Other Country Characteristics

StockTraded: Proxy for the trading volume. Ratio of total value of shares traded in the respective year and gross domestic product. *Source*: World Bank.

McapListed: Ratio of market capitalization of listed domestic companies and gross domestic product. Listed domestic companies refer to domestically incorporated companies listed on the country's stock exchanges at the end of the year. Investment companies, mutual funds, and other collective investment vehicles are not included. *Source*: World Bank.

Tax: Tax preference of an individual investor that holds a substantial share in the firm and who is located in the top income tax bracket. The tax preference is calculated by dividing the after-tax value of one euro of corporate profits that are distributed as dividends by the after-tax value of one euro of corporate profits that is retained and realized in the form of capital gains. *Source*: Kaserer, Rapp, and Trinchera (2012).

InstAssets: Ratio of institutional investors' financial assets and market capitalization of listed domestic companies. *Source*: OECD.

Firm Characteristics

Growth: Annual sales growth. *Source*: Worldscope.

Leverage: Debt ratio measured as the ratio of book value of total debt divided by book value of total assets. *Source*: Worldscope.

Size: Proxy for the size of the company measured as the natural logarithm of the firms' total assets at the end of the year. *Source*: Worldscope.

Risk: Stock Return Volatility Standard deviation of monthly stock returns over the most recent two years including the current fiscal year. *Source*: Datastream.

DivYield: Dividend yield defined as cash dividends divided by market capitalization at the end of the previous year. *Source*: Worldscope.

Roa: Return on assets in percent, measured as (((NI + INTEREST × (1-TAX))/TOTAL ASSETS)−1) × 100 with NI = net income before preferred dividends, INTEREST = interest expense on debt-interest capitalized, TAX = tax rate and TOTAL ASSETS = average of last year's and current year's total assets. *Source*: Worldscope.

Mtb: Natural logarithm of the market to book value defined as market value of equity divided by book value of equity. *Source*: Worldscope.

Cash: Liquidity defined as the ratio of cash and short-term investments divided by total assets. *Source*: Worldscope.

LifeCycle: Proxy for the life cycle stage of a firm. Defined as the ratio of retained earnings and total equity. *Source*: Worldscope.

dStockprice: Average monthly stock price appreciation over the past 12 months. *Source*: Datastream.

IntAcc: Dummy variable that equals one if a company follows international accounting standards such as US-GAAP or IFRS and zero otherwise. *Source*: Worldscope.

lnTobQ: Natural logarithm of Tobin's Q defined as follows: (book value of total assets − book value of equity + market value of equity)/book value of total assets. *Source*: Worldscope.

Global TobQ: European industry median of Tobin's Q. Calculated on a yearly base. *Source*: Worldscope.

DETERMINANTS OF CORPORATE LEVERAGE IN PUBLICLY LISTED GCC COMPANIES – CONVENTIONAL VERSUS SUKUK

Rwan El-Khatib

ABSTRACT

I study the determinants of conventional leverage in a sample of publicly listed corporations based in Saudi Arabia, United Arab Emirates, and Qatar, for a period spanning from 2005 up to end of 2014, and investigate whether those determinants can also explain the utilization of Sukuk by the same corporations in their capital structures. Evidence related to the determinants of conventional leverage is consistent with results from prior studies conducted on corporations based in developed and developing countries. Firm's size, profitability, tangibility, age, and tendency to pay dividends are significant determinants of conventional leverage. However, not all those factors significantly explain the utilization of Sukuk as a financing vehicle. The size of the firm remains to be the most significant factor, in addition to the conformance of those corporations with respect to Shari'a principles measured by their utilization of other Islamic investments and financing instruments. Overall,

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I conclude that models used to predict conventional leverage are not capable of fully explaining the determinants of Sukuk issuances.

Keywords: Capital structure; leverage; conventional bonds; Islamic finance; Sukuk

JEL classifications: G32; Z12

INTRODUCTION

Islamic finance has been growing rapidly into a boom in the past few years, with increasing global bank penetration rate, and with higher growth in Islamic banks compared to its conventional counterparts.[1] The total Islamic finance assets are projected to reach $3.25 trillion by 2020.[2] The banking sector denominates the Islamic finance industry, followed by the Sukuk markets. Total value of global Sukuk outstanding at the end of the third quarter of 2014 is $312.3 Billion, with a growth rate of 34% compared to the end of 2013 (Fig. 1). Despite all this witnessed and expected growth, theoretical and empirical studies related to Islamic finance in general, and Sukuk specifically, are very limited.

Tapping into Sukuk markets is one of the strategies that will enhance further growth in Islamic finance, and in order to facilitate such strategies,

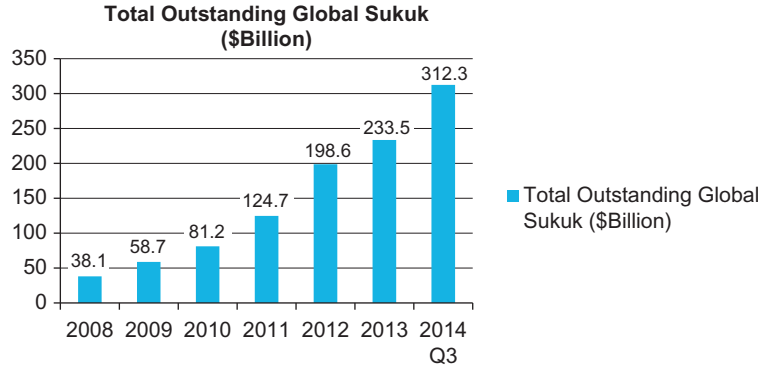

Fig. 1. Historical Trend of Global Sukuk. *Source*: Based on data provided by Zawya – Thomson Reuters (2015a, 2015b).

especially in fast growing countries such as the Gulf Cooperation Council (GCC) countries, it is critical to gain a solid understanding of what Sukuk are, how are they different from conventional bonds, and what are the factors behind their issuance.

Corporations based in GCC countries have a unique feature which is that they operate in economies that facilitates and allows the issuance of both conventional and Islamic finance vehicles. Hence, the research objective of my study is to first study the determinants of conventional leverage in publicly listed companies based in GCC countries, and then to explore whether those determinants are also relevant in the firm's decision of including Sukuk in its capital structure.

Several studies in the corporate finance literature study the determinants of capital structure in U.S.-based companies (e.g., Frank & Goyal, 2003; Kayhan & Titman, 2007; Leary & Roberts, 2010; Shyam-Sunder and Myers, 1999; among others) and some studies examine the determinants of capital structure in other international countries (e.g., Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Rajan & Zingales, 1995; among others). The consensus from all those studies is that there is a set of financial variables that can be used in conventional regressions, or any other models, that explain to a high degree the factors behind the firm's choice of capital structure. Hence in this study, I apply models similar to the robust conventional regressions in attempts to determine the factors that affect GCC listed corporations' choice of financing structure, and to explore whether those factors are similar to the ones that influence the financial choice of other developed and developing countries. Furthermore, I test whether this set of financial variables can also explain the amount of Sukuk outstanding in a firm's capital structure, or whether decisions made by corporations regarding Islamic financing depends on a different set of factors.

Using a sample of publicly listed corporations (excluding the ones in the financial industry) in three countries of the GCC that are experiencing the fastest growth in the conventional and Sukuk markets (Saudi Arabia, United Arab Emirates, and Qatar), and in a period spanning 2005 up to end of 2014, I find evidence supporting previous literature that financial characteristics of the corporation including its size, profitability, asset structure, and tendency to pay dividends significantly influence the capital structure. Larger and less profitable firms, with more fixed assets in their asset structure, and less tendency to pay dividends, have high levels of leverage. Moreover, among the industries in the sample that had the largest value of long-term conventional debt outstanding as of end of year 2014 were Industrial Manufacturing, and Power and Utilities.

However, when using the same conventional leverage regression models to estimate the amount of Sukuk in a firm's capital structure, the evidence is weak. Firm's size is the only financial variable that significantly explains such relationship, with larger firms having more Sukuk in their capital structures because they face lower information costs due to their high reputation and diversification. This evidence is consistent with views that Sukuk are different from conventional bonds (Godlewski, Turk-Ariss, & Weil, 2013) and hence factors underpinning this choice need to be further studied. One of the factors that I report to be empirically significant for the Sukuk issuance decision is the existence of other Islamic short-term and long-term investments or financing instruments. Finally, among the industries in the sample that had the largest value of Sukuk outstanding as of the end of year 2014 were Power and Utilities, Real Estate, and Oil and Gas.

The paper proceeds as follows. The section "Literature Review" discusses the literature on conventional capital structure, Sukuk, and Islamic capital structure. The next section outlines the hypotheses. The section "Data" describes the data and the sample. The section "Results and Discussions" presents the empirical models and results of estimation. The final section concludes.

LITERATURE REVIEW

Conventional Leverage

Extensive finance literature investigates the choice of a firm's level of debt versus equity in its capital structure and provides reasons behind such choice. The two classical theories that were developed to explain such choice are either that firms balance the costs and benefits of debt versus equity (the trade-off theory as introduced by Kraus & Litzenberger, 1973), or that firms try to minimize adverse selection costs, hence they have a preferred ranking of finance resources, starting with internal funds, then debt, and finally equity (the pecking order theory as introduced by Myers, 1984 and Myers & Majluf, 1984).

Following those two main theories, many empirical studies have evolved to test the financing behavior of publicly listed American firms. Yet, no consensus agreement has been reached on which of the two theories (pecking vs. trade-off) exactly determines firms' choice of debt versus equity, as this will depend on several factors such as the size of the firm (Fama & French, 2005;

Frank & Goyal, 2003), the degree of information asymmetry (Bharath, Pasquariello, & Wu, 2009), and degree of agency costs causing incentive conflicts (Leary & Roberts, 2010).

Moreover, some studies have suggested that both the trade-off theory and pecking order theory can coexist and can jointly be used to explain a firm's financing decisions, for instance, Lemmon and Zender (2010); and Fama and French (2005), who suggest that each of the pecking order and trade-off theory contain elements that can explain the firm's choice of capital structure.

International studies have also emerged to explain the choice of a firm's financing decision across different countries, and to explore whether the same models and theories apply across different countries compared to developed countries. Rajan and Zingales (1995) examine the capital structure decisions of publicly listed firm in the G7 countries and report them to be correlated with publicly listed firms in the United States. Moreover, Booth et al. (2001) analyze the capital structure of 10 developing countries (India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan, and Korea) and document that the same models and variables used in developed countries can be employed to explain the financing decision of publicly listed firms in those 10 developing countries. However, very limited empirical research is done to examine the determinants of capital structure of publicly listed firms in GCC countries.

Sukuk and Islamic Capital Structure

The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) defines Standard of Investment Sukuk as: "certificates of equal value representing undivided shares in ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity."[3]

Sukuk is an Arabic word that means financial certificate. A Sukuk's structure is generally referred to be the equivalent to a conventional bond, but it is in conformance with Shari'a principles (Godlewski et al., 2013). Hence, Sukuk are viewed as "Islamic Bonds" where the key difference lies in the fact that the legal and/or beneficial owners of the underlying assets are the Sukuk holders (Thomson Reuters, 2015a, 2015b). However, AAOIFI emphasizes that Sukuk are not debt certificates with a financial claim to cash flow and that they may not be issued on a pool of receivables (Godlewski et al., 2013). There are six types of Sukuk (Murabaha, Ijara,

Istisna, Mudaraba, Musjaraka, and Salam) that provide the certificate holder with a proportional interest in an asset or a pool of assets and ultimately to receive the proportionate share of resulting cash flow from ownership in the associated asset.[4]

Debates still exist on whether Sukuk are different from conventional bonds. However, there are limited studies that explore this issue, and there are almost none that examines the reasons behind Sukuk issuance by corporations. Some authors such as Miller, Challoner, and Atta (2007) suggest that the only difference between Sukuk and conventional bonds is the source of the return (underlying asset rather than interest). However, other researchers such as Godlewski et al. (2013) and Cakir and Raei (2007) document that Sukuk are different from conventional bonds and hence vehicles arising from Islamic finance are different from conventional finance instruments. Cakir and Raei (2007) show that the pricing behavior of Sukuk is different from the pricing behavior of conventional bonds and adding Sukuk to an investment portfolio will result in diversification benefits. Furthermore, Godlewski et al. (2013) indicate that investors react differently to the announcement of Sukuk issuances compared to the announcement of conventional bonds issuances. The authors attribute this finding to the ability of investors to distinguish between those two financial instruments and hence the authors argue that those two instruments are different.

In fact, only limited empirical research is available in this area and further research needs to be conducted to explore and understand Sukuk, which are considered to be one of the major financing vehicles used in the recent rapid global growth of Islamic Finance.[5] Although some research has been done on other related topics in the Islamic Finance literature, such as Aggarwal and Yousef (2000) who study the financial instruments offered by Islamic banks; Beck, Demirguc-Kunt, and Merrouche (2013) who compare the Islamic banks to conventional banks; and Weil and Godlewski (2014) who investigate the reasons behind choice of Islamic versus conventional loan by a sample of large firms in the Middle East and Southeast Asia, more is still needed to be explored specifically in the Sukuk area.

Not only is there limited theoretical and empirical research conducted on Sukuk and specifically on factors behind a firm's choice to issue Sukuk, there is also limited research on the general understanding of the capital structure of firms acting in accordance to Shari'a principles. Research available in this field is strictly related to capital structure of Islamic banks (Al-Deehani et al., 1999) or corporate governance of Islamic banks (Safieddine, 2009). To my knowledge, there are no studies related to examining determinants of capital structure decisions by corporations adopting Shari'a principles.

HYPOTHESES

Due to the rapid growth of Islamic finance and the particular massive growth in Sukuk issuances all across the globe, it is critical to first understand the factors behind the financial decision made by corporations with respect to their capital structure, and then to investigate whether the same factors/models can be used to explain how much Sukuk the firms have as an element in their capital structure.

Although there are alternative models used in the literature to measure the capital structure decision by firms, the majority of those researches employ a conventional set of explanatory factors for leverage as suggested by Harris and Raviv (1991). Frank and Goyal (2003) suggest that the reason behind the popularity of such variables is that they have succeeded in explaining different firms' financing decision under several settings. Indeed, Rajan and Zingales (1995) employ those conventional variables on an international sample and the variables succeed in explaining international choices of leverage.

Since those models have proven to be of high predictive power in firms across different countries, I expect that those models should be able to explain the conventional financing decision by GCC firms as well. However, due to the fact that GCC countries are tax free, and due to the fact that those companies are conducting businesses in one of the fastest growing regions with respect to Islamic finance generally, and Sukuk issuances specifically, my first hypothesis to test with no a priori is:

> **Hypothesis 1[1A].** The financing decision of GCC publicly listed firms can [cannot] be explained by the same conventional variables used in the literature.

Many believe that Sukuk are not different than conventional bonds although some authors (Godlewski et al., 2013) provide some empirical evidence that Sukuk are different from conventional bonds and that investors in the market understand and recognize this difference. Furthermore, Weil and Godlewski (2014) show that loan characteristics, maturity, and terms do not influence the decision to offer Islamic loans by large corporations. Hence, rather than focusing on studying the characteristics of Sukuk issuances, I focus on studying the financial characteristics of firms issuing those Sukuk, and if Sukuk are simply conventional bonds, I should find similar results when using the conventional models to predict the value of Sukuk in the firms' capital structures. However, since there is no enough literature to provide solid evidence on whether

Sukuk are similar (different) from conventional bonds, my second hypothesis to test with no a priori is:

> **Hypothesis 2[2A].** The amount of Sukuk in a firm's capital structure can [cannot] be explained by the same conventional variables used in the literature to explain conventional leverage.

Finally, I cannot ignore the fact that Sukuk are issued in conformity with Shari'a regulation, hence I expect that conforming to Shari'a regulation in the firms' investing and financing transactions will be a significant factor in explaining the firms' financing decisions. Hence my third hypothesis is:

> **H3.** Existence of other Islamic investments and Islamic financing instruments in a business is one of the factors that explain the proportion of capital structure compromised of Sukuk.

DATA

In 2014, the global Sukuk issuances totaled around $130 Billion, with the largest proportion of it issued by Malaysia, followed by Saudi Arabia, and then United Arab Emirates.[6] Qatar is also known to play a critical role in the Sukuk markets. Since it is important to understand reasons behind financing decisions of such key players in a rapid growing industry, and since no prior studies examined such markets, I will focus in this study on those three GCC countries (Saudi Arabia, UAE, and Qatar).

Although sovereign funds remain to be the dominant issuers in the Sukuk markets, but corporations are becoming key players as well. 42.33% of the total value of new bonds and Sukuk issuances during 2014 in the GCC market came from corporations (excluding the financial services and government entities).[7] Leverage is known to be a major determinant of the corporations' performance, in fact, Zeitun and Saleh (2015) empirically support this notion by studying a sample of publicly listed GCC firms. The authors suggest that policy makers should understand how to improve the performance of their corporations by utilizing leverage. Hence, I will focus in this study on the corporations. Another benefit from analyzing corporations is that all the models that have proven to be robust in the literature were empirically tested on corporations, and corporations in the GCC provide a unique setting for examination, since they have access to both conventional and Islamic bond markets (Sukuk).

I obtain the financial data of publicly listed corporations in Saudi Arabia, UAE, and Qatar, from Zawya-Thomson Reuters database. In the

analysis, following typical research standards, I exclude the firms in the financial sector. I use a sample spanning from 2005 up to end of year 2014 because although data is available since the inception of firms, most of this data is inaccurate (many missing values) and there was a much smaller number of publicly listed firms in the early 2000s. I restrict each firm to have at least 3 years of data to be included in the analysis. This results in a panel sample of 191 firms in 1,731 year observations. Out of the 191 firms, 61% are based in Saudi Arabia, 28% in United Arab Emirates, and 11% in Qatar.

Following Fama and French's 12 industry classifications, I classify the publicly listed firms into 12 categories (based on Zawya's disclosure of industry type).

Table 1 displays the distribution of the sample firms in the 11 industry categories.[8] The largest concentration of the sample (27%) is in the Industrial Manufacturing industry. Construction, Transport, and Mining constitute (18.7%) of the sample. Real estate, and Food and Beverages represents (11.32%), (10.11%) of the sample, respectively. The smallest concentration of industries in the sample are Consumer Goods (2.25%) and Power and Utilities[9] (2.31%).

To get a better understanding of the financial nature of the firms in the sample, Table 2 provides summary statistics of those key financial variables.

Following traditional literature, *Debt to Market Equity* is the book value of total liabilities to market capitalization of the firm, where market capitalization is calculated as the end of year price per share times the number of common shares outstanding. *Debt to Book Equity* is the book value of total liabilities to book value of firm's equity. *Long-Term Debt to Market Equity* is the book value of long-term debt to market capitalization of the firm. *Long Term Debt to Book Equity* is the book value of long-term debt to book value of the firm's equity. *Sukuk to Market Equity* is the book value of Sukuk outstanding at the end of the year divided by the firm's market capitalization. *Sukuk to Book Equity* is the book value of Sukuk to the book value of the firm's equity. *Tangibility* is the ratio of total fixed assets over total assets. *Market to Book ratio* is the firm's Tobin's Q ratio, calculated as the sum of market value of equity (end of year price per share × number of shares outstanding at the end of year), short-term and long-term debt, and the liquidating value of preferred stocks, all divided by the total value of book assets. *Profitability* is the return on total assets, computed as net income before depreciation divided by total assets. *Size* is the natural logarithm of total assets. *Financial Deficit*

Table 1. Industry Composition of the Sample.

Industry	Number of Observations	Percentage
Food and beverages	175	10.11
Consumer goods	39	2.25
Industrial manufacturing	471	27.21
Oil and gas	151	8.72
Telecommunications and media	87	5.03
Power and utilities	40	2.31
Retail and other services	60	3.47
Health care	81	4.68
Construction, transport, and mining	324	18.72
Agriculture	107	6.18
Real estate	196	11.32
Total	1,731	100

Notes: This table presents the industry composition of the sample of publicly listed firms in Saudi Arabia, UAE, and Qatar as reported by Zawya, during the period spanning 2005 up to end of 2014. I manually classified the companies into 12 groups in a manner similar to the Fama French 12 industry classifications, and I present below those sub classifications excluding the financial services industry category.

is Shyam-Sunder and Myers measure (1999), and it equals the sum of change in net working capital plus total investments plus dividends paid, minus operating cash flow. *Age* is the company's age calculated as the difference in years between the sample year and the year of the company's establishment.

The mean (median) of *Debt to Market Equity* is 62.65% (21.88%), and of *Debt to Book equity* is 94.02% (47.30%). The mean (median) of *Long term Debt to Market Equity* is 21.40% (0.44%), and of *Long term Debt to Book Equity* is 29.27% (1.49%). From those leverage ratios, we can infer that the publicly listed companies in Saudi Arabia, UAE, and Qatar on average take moderate financial risks and do not finance their assets with excessive or minimal levels of debt to equity. Moreover, when comparing those conventional leverage ratios to the percentage of Sukuk present in those firms' capital structure, we find that the firms are not utilizing that much of Sukuk, as the mean (median) of *Sukuk to Market Equity* is 4.06% (9.99%), and mean (median) of *Sukuk to Book Equity* is 10.22% (15.70%), respectively.

Table 2. Summary Statistics of Firms' Financial Variables.

Variable	*N*	10th Percentile	Mean	SD	Median	90th Percentile
Debt to Market Equity (%)	1,731	2.98	62.65	205.42	21.88	130.67
Debt to Book Equity (%)	1,731	6.71	94.02	175.42	47.30	205.73
Long term Debt to Market Equity (%)	1,731	0.00	21.40	140.25	0.44	37.45
Long term Debt to Book Equity (%)	1,731	0.00	29.27	111.18	1.49	56.29
Sukuk to Market Equity (%)	1,731	0.00	4.06	18.37	9.99	34.75
Sukuk to Book Equity (%)	1,731	0.00	10.22	17.55	15.70	37.80
Tangibility (%)	1,731	3.01	38.48	25.20	37.46	72.26
Market to Book ratio	1,731	0.64	3.47	5.25	2.03	6.86
Profitability (%)	1,731	−1.74	6.61	10.65	5.94	17.71
Size (log)	1,731	11.07	13.17	1.72	13.04	15.66
Financial Deficit ($000)	1,731	−260,745	121565.4	1,854,034	−1,222	606,259
Age (years)	1,731	5.00	23.03	13.85	23.00	42.00

Notes: This table presents the summary statistics of the financial variables for the sample of publicly listed companies in three gulf countries (Saudi Arabia, United Arab Emirates, and Qatar) for the period spanning from 2005 up to end of 2014. Those publicly listed firms exclude firms that are in the financial services industry. *Debt to Market Equity* is the book value of total liabilities to market capitalization of the firm, where market capitalization is calculated as the end of year price per share times the number of common shares outstanding. *Debt to Book Equity* is the book value of total liabilities to book value of firm's equity. *Long Term Debt to Market Equity* is the book value of long-term debt to market capitalization of the firm. *Long Term Debt to Book Equity* is the book value of long-term debt to book value of the firm's equity. *Sukuk to Market Equity* is the book value of the Sukuk outstanding at the end of the year divided by the firm's market capitalization. *Sukuk to Book Equity* is the book value of Sukuk outstanding at the end of the year divided by the book value of equity. *Tangibility* is the ratio of total fixed assets over total assets. *Market to Book ratio* is the firm's Tobin's Q ratio, calculated as the sum of market value of equity (end of year price per share × number of shares outstanding at the end of year), short-term and long-term debt, and the liquidating value of preferred stocks, all divided by the total value of book assets. *Profitability* is the return on total assets, computed as net income before depreciation divided by total assets. *Size* is the natural logarithm of total assets. *Financial Deficit* is measured based on Shyam-Sunder and Myers (1999) definition, and it equals the sum of change in net working capital plus total investments plus dividends paid, minus operating cash flow. *Age* is the company's age calculated as the difference in years between the sample year and the year of the company's establishment.

The mean (median) of *Tangibility* is 38.48% (37.46%) suggesting that the sample firms do indeed include fixed assets in their asset structures. In addition, looking at the market to book and profitability ratios, the firms have growth potential and investment opportunities, and are generating

on average positive accounting returns although not quite high (mean (median) ratios of *Market to Book* and *Profitability* are 3.47 (2.03), and 6.61% (5.94%), respectively).

Furthermore, the sample firms on average are investing more than what they internally generate as evidenced by the positive mean of *Finance Deficit* of $121,565,400 (median is −$1,222,000), and they have a mean (and median) *Age* of 23 years.

The total value of long-term debt outstanding in the sample firms at the end of year 2014 is $123 Billion. To get a better understanding of what industries typically raise more leverage, Fig. 2 classifies the long-term debt outstanding as of the end of year 2014 by the firm's industries. The industry with the largest value of long-term debt outstanding is Oil and Gas (35%), followed by Power and Utilities (28%), and Industrial Manufacturing (21%). Moreover, to identify which industries are the largest contributors to Sukuk issuances in the sample firms, Fig. 3 classifies the total value of Sukuk outstanding as of end of year 2014 by the firms' industries. The total value of outstanding Sukuk for the sample totaled $18.2 Billion at the end of 2014, with the largest concentration (41%) coming from the Power and Utilities industry, followed by Real Estate (29%) and Oil and Gas (26%) as shown in Fig. 3.[10] This descriptive comparison shows that there is a difference in the type of financing choice (long-term debt vs. Sukuk) based on the industry type.

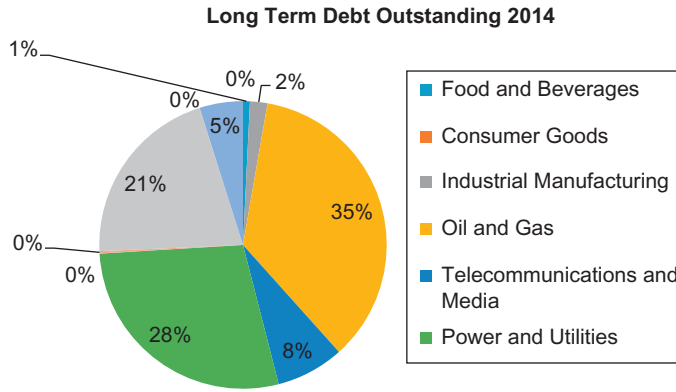

Fig. 2. Long-Term Debt Outstanding (2014) for Sample Firms Classified by Industry. *Source*: Author's calculations based on data from Zawya.

RESULTS AND DISCUSSIONS

Conventional Determinants of Conventional Leverage

To test Hypothesis 1[1A] on whether the financing decision of GCC publicly listed firms can (cannot) be explained by the same conventional variables used in the literature, following Harris and Raviv (1991), Frank and Goyal (2003), Rajan and Zingales (1995), among others, I employ the following OLS model with robust standard errors:

$$\begin{aligned} D_{i,t} = {} & \alpha + \beta_1\, Tangibility_{i,t-1} + \beta_2\, Market\ \ to\ \ Book_{i,t-1} + \beta_3\, Size_{i,t-1} \\ & + \beta_4\, Profitability_{i,t-1} + \beta_5\, Financial\ \ Deficit_{i,t-1} + \beta_6\, Age_{i,t} \\ & + \beta_7\, Dividend\ \ Payer_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{1}$$

where $D_{i,t}$ is the measure of level of leverage for firm i in year t. I will estimate this variable using both total debt and long-term debt to the ratio of book value equity, and market value of equity, as all those variables were used in the literature to measure leverage. Moreover, I use levels of leverage rather than changes in leverage that are used by some studies, because the emphasis of my paper is to explain the financing decision using conventional measures, and to test for that, using levels of leverage is more appropriate (Frank & Goyal, 2003).[11,12]

$Tangibility_{i,t-1}$, $Market\ to\ Book_{i,t-1}$, $Size_{i,t-1}$, $Profitability_{i,t-1}$, and $Financial\ Deficit_{i,t-1}$ are as previously defined in the section "Data" and are all lagged one year. $Age_{i,t}$ is the firm's age and $Dividend\ Payer_{i,t}$ is an

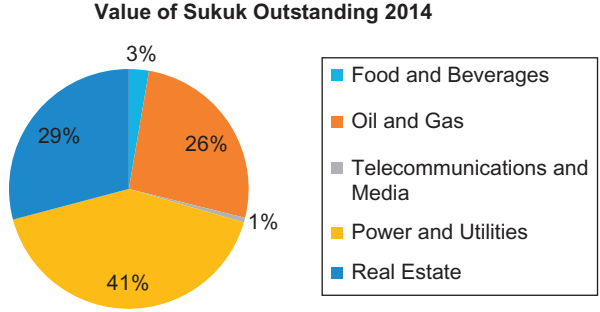

Fig. 3. Total Sukuk Value Outstanding (2014) for Sample Firms Classified by Industry. *Source*: Author's calculations based on data from Zawya.

indicator that is set to 1 if the company paid any dividends in year t and zero otherwise. All models include controls for industry effects, country effects, and time effects.

Tangibility is related to the fact that tangible assets usually serve as a collateral that supports debt. Thus, it is expected that the coefficient of *Tangibility* B_1 will be positive. There has been some disagreement on the effect of the market to book ratio on leverage. The more common interpretation which is consistent with the pecking order theory is that the market to book ratio is a proxy for growth opportunities, hence a firm with more growth opportunities will need more debt financing. However, some researchers such as Baker and Wurgler (2002), Barclay, Smith, and Morellec (2006), Smith and Watts (1992), and Bradley, Jarrell, and Kim (1984) document a negative relationship between the market to book ratio and leverage. Hence, it is not obvious whether the coefficient of *Market to Book* (B_2) will be positive or negative. Large firms usually face lower information costs due to their high reputation and diversification (Frank & Goyal, 2003). Therefore, large firms are predicted to have more debt in their capital structures, and hence the coefficient of *Size* (B_3) is expected to be positive. Contradicting evidence is found when it comes to profitability. Supporters of the trade-off theory suggest that there is a positive correlation between profitability and debt to offset corporate taxes, while researchers who find that profitability is negatively correlated to debt (Fama & French, 2002; Titman & Wessels, 1988) attribute their finding not only to the pecking order theory but also to the fact that profitability can be a signal to investment opportunities (Frank & Goyal, 2003). In the case of GCC firms, I expect the coefficient of *Profitability* (B_4) to be negative since the companies operate in tax-free countries, thus the second explanation seems to be more relevant in this context. In addition to those conventional variables, researchers have included the variable *Financial Deficit* as proposed by Shyam-Sunder and Myers (1999) to figure out whether firms with higher financial deficits, that is, firms that raise more external capital, tend to increase their leverage.[13] Frank and Goyal (2003) suggests that financing deficit cannot eliminate the effect of conventional variables and hence the author adds a variable to measure financing deficit in his conventional regression models. While Leary and Roberts (2010) document a weak relation between financial deficit and leverage, Kayhan and Titman (2007) explain that the stronger effect of financial deficit is present when firms are raising capital rather than paying out capital. Thus, I include the *Financial Deficit* variable in attempts to explain financing decision of firms, and to explore whether *Financial Deficit* is indeed relevant for corporations operating in the GCC region with no expectations

toward the sign of the coefficient (B_5). Firm's age (*Age*) and whether it pays out dividends (*Dividend Payer*) are also common variables used in the literature. They are expected to have a negative relationship with the degree of leverage as they proxy for less investment opportunities. Hence B_6 and B_7 are expected to be negative.

Results of the estimation of Eq. (1) are presented in Table 3. The dependent variable is the ratio of *Debt to Market Equity*, *Debt to Book Equity*, *Long term Debt to Market Equity*, and *Long term Debt to Book Equity* in columns 1, 2, 3, and 4, respectively. Since I am using lagged independent variables in all of the models, the number of observations drops to 1,540.

When using *Debt to Market Equity* as the dependent variable in column 1, firm's size, profitability, and age are the significant determinants of the financing decision. All of those conventional determinants have the same expected sign which has been documented in the literature while testing American and other international public corporations. There is a significant positive relationship between size and the firm's choice of leverage in its capital structure compared to equity (coefficient on *size* is significant at the 1% level), larger public companies in Saudi Arabia, UAE, and Qatar utilize more leverage in their capital structures. Profitability is significantly negatively associated with leverage (coefficient on *profitability* is significant at the 1% level). This is consistent with the pecking order theory predictions, hence profitable public companies in Saudi Arabia, UAE, and Qatar tend to use their internal resources in financing their investment opportunities before going to external financing. Older companies in Saudi Arabia, UAE, and Qatar tend to utilize significantly less leverage compared to equity (coefficient on *Age* is significant at the 1% level) and this is typical, since older firms do not have many investment opportunities. Tangibility, market to book ratio, financial deficit, and whether a firm pays dividends do not significantly affect the amount of debt to market equity.

When using *Debt to Book Equity* as the dependent variable in column 2, variables that were significant in column 1 remain to be significant: firm's size, profitability, and age are significant determinants of leverage in Saudi Arabia, UAE, and Qatar-based companies (the coefficient on each of *Size*, *Profitability*, and *Age* is statistically significant at the 1% level). In addition, the firm's tangibility and market to book ratio are positively significantly related to the debt to book equity ratio (the coefficient on *Tangibility* and *Market to Book* is statistically significant at the 10% and 1% levels, respectively). The positive significant coefficient of *Market to Book* is consistent with literature documenting that the *Market to Book* ratio is a proxy of investment or growth opportunities.[14] Finally, whether a

Table 3. Conventional Determinants of Corporate Leverage.

Model Dependent Variable	(1) Debt to Market Equity	(2) Debt to Book Equity	(3) Long Term Debt to Market Equity	(4) Long Term Debt to Book Equity
$Tangibility_{t-1}$	10.5836	37.9657*	45.4961***	78.3722***
	(0.533)	(0.054)	(0.000)	(0.000)
Market to $Book_{t-1}$	−0.7840	3.7968***	−0.6530	−0.3428
	(0.253)	(0.000)	(0.337)	(0.533)
$Size_{t-1}$	21.6590***	28.3125***	10.4115***	15.2938***
	(0.000)	(0.000)	(0.000)	(0.000)
$Profitability_{t-1}$	−205.2946***	−288.7015***	−51.1420**	−61.1537***
	(0.000)	(0.000)	(0.035)	(0.001)
Financial $Deficit_{t-1}$	−0.0000	−0.0000	−0.0000	−0.0000
	(0.735)	(0.297)	(0.940)	(0.624)
Age_t	−0.6443***	−1.0636***	−0.3570*	−0.7169***
	(0.010)	(0.000)	(0.063)	(0.000)
Dividend $Payer_t$	−3.9015	−16.8704*	−7.2354	−18.6320***
	(0.574)	(0.069)	(0.199)	(0.001)
Constant	−203.2676***	−271.9787***	−114.7845***	−159.5242***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
N	1,540	1,540	1,540	1,540
Adjusted R^2	29.25%	25.35%	18.72%	24.98%

Notes: This table displays the results of panel OLS regression models with robust standard errors used to estimate the leverage of publicly listed companies in Saudi Arabia, UAE, and Qatar, during the period spanning 2005 up to end of 2014, controlling for traditional financial variables and financial deficit. Companies in the Finance industry are excluded from the analysis. The dependent variable is the *Total Debt to Market Equity*, *Total Debt to Book Equity*, *Long Term Debt to Market Equity*, and *Long Term Debt to Book Equity*, in models 1, 2, 3, and 4, respectively. Dependent and independent variables are as previously described in Table 2. All independent variables are lagged one year, and thus the number of observations drops to 1,540. *Dividend Payer* is a dummy set to 1 if the company paid dividends in the year, and zero otherwise. Industry, country, and year effects are included in all models. Heteroskedastic-consistent probability values rejecting the null hypotheses of zero coefficients are reported in parentheses.

***, **, * denotes statistically significant at the 1%, 5%, and 10% levels, respectively.

firm pays dividends is significantly negatively (coefficient on *Dividend Payer* is statistically significant at the 10% level) associated with leverage, since usually dividend payer firms tend to have less investment opportunities and hence they don't need to issue long-term debt.

In columns 3 and 4, I restrict the debt to only include long-term debt in order to be able to compare those models to the upcoming models which will use the Sukuk as the dependent variable. When using the *Long term Debt to Market Equity* in column 3, all of the variables that were significant in column 1 (when using *Debt to Market Equity*) remain significant (The coefficient on *Size*, *Profitability*, and *Age* is statistically significant at the 1%, 10%, and 5% levels, respectively). In addition, tangibility is now showing as significantly positive (coefficient on *Tangibility* is statistically significant at the 1% level) confirming that the existence of tangible collateral increases the ability of a firm to issue long-term debt; thus tangibility could be more relevant when testing the relation to long-term rather than total debt. However, the market to book ratio and degree of financial deficit in Saudi Arabia, UAE, and Qatar firms are not significant determinants of the companies' long-term debt.

Finally, when using *Long term Debt to Book Equity* as the dependent variable in column 4, all of the variables that were significant in column 3 (when using *Long Term Debt to Market Equity*) remain to be significant (the coefficient on each of *Tangibility*, *Size*, *Profitability*, and *Age* is statistically significant at the 1% level). In addition, *Dividend Payer* is statistically significant at the 1% level. Overall, from Table 3, I conclude that the conventional variables used in the literature to explore the financing decision by listed firms in developed and developing countries are the same variables that could explain the financing decision in Saudi Arabia, UAE, and Qatar-based companies. The higher the tangibility, the larger the size, the lower the profitability, the younger the firm, and the fact that the firm doesn't pay dividends, the higher is the component of debt in the firms' capital structure compared to equity. Evidence from Table 3 supports Hypothesis 1 that the financing decision of GCC publicly listed firms can be explained by the same conventional variables used in the literature.

Determinants of Sukuk Using Conventional Models

To test Hypothesis 2[2A] on whether the amount of Sukuk in a firm's capital structure can (cannot) be explained by the same conventional variables used in the literature, I utilize the same model that is used to explain the

level of conventional debt (or conventional long-term debt) to equity. If the conventional variables remain to be significant in this setting, then we can conclude that the choice of Islamic financing vehicles by publicly listed firms depends on the same variables that determine the choice of conventional debt, however if those conventional variables fail to explain the choice of Islamic finance instruments (Sukuk), then we can infer that the decision on issuing Sukuk depends on other factors that don't influence the choice of conventional debt.

One of the unique characteristics of this sample of publicly listed corporations in Saudi Arabia, UAE, and Qatar is the companies' ability to issue both kinds of conventional and or Islamic bonds (Sukuk), as those companies are not restricted by regulation to only using Islamic financial vehicles and there are opportunities for growth in both bonds and Sukuk markets. In fact, 73% of the subsample of firms that issue Sukuk have both Sukuk and conventional long-term debt in their financial structures, while 27% of that subsample only issue Sukuk.

Taking into consideration that one of the key factors that determine the decision of utilizing Sukuk as a vehicle for financing is the tendency of the corporation to act in compliance with Shari'a rules, I add to the conventional model of predicting leverage a measure for such compliance measured by the existence of other Islamic investment or financing instruments. I expect that if one of the reasons that the company issues Sukuk is its preference of using Islamic conforming vehicles, then this company is expected to have other Islamic investments or financing instruments represented in its balance sheet.

By analyzing the financial statements of the sample of publicly listed Saudi Arabia, UAE, and Qatar corporations, I find that indeed 73% of the firms that issue Sukuk also have other Islamic investments and financing vehicles. In addition, 88% of the companies that have other Islamic investments and financing vehicles didn't have any Sukuk outstanding during the sample period. This suggests that although conformity to Shari'a principle is expected to be a positive and significant determinant of Sukuk issuance, however, there is still a large potential for the growth in this market, because there are companies that deal with other short-term or long-term Islamic investments and financing vehicles, but those companies don't choose to have Sukuk as a component of their financing capital. Hence it is critical to understand what underpins the decision of those firms with respect to the choice of financing other than conforming to Shari'a standards.

Based on the above, I estimate the following model using panel OLS regression models with robust standard errors:

$$\begin{aligned} S_{i,t} = \alpha + \beta_1 Islamic\ \ Transactions_i + \beta_2 Tangibility_{i,t-1} + \beta_3 Market\ \ to\ \ Book_{i,t-1} \\ + \beta_4 Size_{i,t-1} + \beta_5 Profitability_{i,t-1} + \beta_6 Financial\ \ Deficit_{i,t-1} \\ + \beta_7 Conventional\ \ Leverage_{i,t-1} + \beta_8 Age_{i,t} + \beta_9 Dividend\ \ Payer_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{2}$$

Where *Islamic Transactions*$_i$ is an indicator that is set to 1 if the company has any other short-term or long-term Islamic investments or financing, and zero otherwise. All other variables are as previously defined, and *Conventional Leverage*$_{i,t-1}$ is the lagged conventional leverage calculated as a ratio of debt to equity. The model includes controls for country, industry, and time effects.

As I discussed above, I expect the sign of coefficient B_1 (*Islamic Transactions*) to be significant and positive. All other coefficients are expected to have the same signs as in the models used to predict conventional leverage if decisions on issuing Sukuk and conventional rely on similar factors. Finally, if Sukuk are different from conventional bonds, then I expect the coefficient of B_7 (*Conventional Leverage*) to be negative, because the higher the conventional leverage is a part of the financing structure of a company, the lower should the Sukuk be. However, if Sukuk and conventional bonds are determined in the same manner by a company, then the coefficient on B_7 will be positive.

Results of the estimation of Eq. (2) are presented in Table 4. The dependent variable is the total Sukuk outstanding as a ratio to market equity in column 1 and as a ratio to book equity in column 2. In both models, the coefficient on *Islamic Transactions* is positive and significant at the 5% level providing evidence that is in line with expectations. This result supports Hypothesis 3, that is companies that have other Islamic instruments (such as short-term or long-term investments or financing) will have Sukuk constituting a larger percentage of their capital structure in relation to equity. However, all other financial conventional variables are insignificant except for *size*. *Size* is positively and very significantly related to having Sukuk as part of the financing capital (the coefficient is significant at the 1% level). *Age* is also sometimes significantly but negatively related to the financing decision (the coefficient is significant only when measuring Sukuk to Book equity in column 2 at the 10% level). In both models (1 and 2), the Adjusted R^2 is much smaller than when the conventional leverage was

estimated. Hence no solid evidence can be driven on the suitability of merely using conventional financial variables to explain the utilization of Sukuk as a source of financing and more factors need to be added. This evidence supports Hypothesis 2[A], the amount of Sukuk in a firm's capital structure (cannot) be explained by the same conventional variables used in the literature to explain conventional leverage.

In attempts to explain whether the decision of raising Sukuk is independent from the decision of raising conventional debt, after finding that conventional financial variables do not fully explain the Sukuk utilization in capital structure, I add in the variable *Excess Leverage* in columns 3 and 4. *Excess leverage* is the extra amount of leverage that a firm obtains in realty than what it should have actually utilized based on the predictions of the conventional model. This variable will serve as a proxy for other factors that cause firms' to increase conventional leverage other than the financial variables. I calculate this variable by obtaining the residuals from running Eq. (1) on long-term debt to equity, and using the residual as an explanatory variable in this model for predicting Sukuk. The residuals account for the difference in actual versus predicted long-term leverage. If those residuals are significant in the model to predict Sukuk, then this implies that the decision of the firm to raise capital through Sukuk is dependent on the level of conventional leverage taken by the firm, but this dependence cannot be explained by only using conventional financial variables, more factors causing firms to take excess conventional leverage need to be investigated.

Excess leverage in column 3 of Table 4 is the residual of running column 3 in Table 3 (regressing *Long term Debt to Market Equity* on conventional variables) and in column 4 of Table 4 is the residual of running column 4 in Table 3 (regressing *Long Term Debt to Book Equity* on conventional variables).

As presented in columns 3 and 4 in Table 4, the coefficient of *Excess Leverage* is highly significant and negative (statistically significant at the 1% level). Hence if a firm takes on conventional leverage more than what it should as predicted by its financial variables, then this firm will take on less Sukuk. Thus, the Sukuk-long-term debt decision is interrelated and those two decisions are not independent, yet the decision to issue Sukuk cannot be explained solely by financial variables and more investigation needs to be done to explore what those factors causing excess leverage are.[15] Moreover, the other variables remain the same in significance in models 3 and 4, with only *Islamic Transactions* and *Size* being significant. Finally, adding *Excess Leverage* into columns 3 and 4 slightly increases the adjusted R^2 of the models.

Table 4. Conventional Leverage Regression Models Used to Explain Sukuk.

Model Dependent Variable	(1) Sukuk to Market Equity	(2) Sukuk to Book Equity	(3) Sukuk to Market Equity	(4) Sukuk to Book Equity
Islamic Transactions	0.8269**	0.7568**	0.8217**	0.7139**
	(0.022)	(0.032)	(0.022)	(0.042)
Excess Leverage			−0.0054***	−0.0052***
			(0.002)	(0.002)
$Tangibility_{t-1}$	−0.7983	−0.3267	−0.8069	−0.3959
	(0.236)	(0.621)	(0.230)	(0.548)
Market to $Book_{t-1}$	0.0274	0.0311	0.0276	0.0152
	(0.537)	(0.481)	(0.532)	(0.733)
$Size_{t-1}$	0.6740***	0.7538***	0.6635***	0.7018***
	(0.000)	(0.000)	(0.000)	(0.000)
$Profitability_{t-1}$	−1.9288	−0.7283	−1.8183	−0.0930
	(0.224)	(0.644)	(0.250)	(0.953)
Financial $Deficit_{t-1}$	0.0000	0.0000	0.0000	0.0000
	(0.232)	(0.771)	(0.227)	(0.755)
Conventional $Leverage_{t-1}$	−3181.2680	−5.2415	2680.09	13.9757
	(0.675)	(0.587)	(0.731)	(0.222)
Age_t	−0.0122	−0.0206*	−0.0117	−0.0191
	(0.330)	(0.094)	(0.347)	(0.119)
Dividend $Payer_t$	−0.0190	0.5270	−0.0234	0.5636
	(0.959)	(0.143)	(0.949)	(0.116)
Constant	−7.5475***	−8.1382***	−7.4372***	−7.5363***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
N	1540	1540	1540	1540
Adjusted R^2	9.68%	11.60%	10.20%	12.10%

Notes: This table replicates the estimation tests presented in Table 3 while trying to explain the proportion of capital structure contained in Sukuk. The dependent variable is the ratio *of Sukuk to Market Equity* in models 1 and 3, and *Sukuk to Book Equity* in models 2 and 4. *Islamic Transactions* is a dummy variable that is set to 1 if the company has any Islamic financial transactions such as Islamic investments or Islamic short-term or long-term financing, and zero otherwise. *Excess Leverage* is the excess of actual leverage over leverage predicted from conventional leverage regression models presented in Table 3 where leverage is measured using the long-term debt to equity ratios; hence it is the residual from the regression models 3 and 4 in Table 3, respectively. All other independent variables are as previously described in Table 2. All independent variables are lagged one year. Industry, country, and year effects are included in all models. Robust standard errors are used. Heteroskedastic-consistent probability values rejecting the null hypotheses of zero coefficients are reported in parentheses.
***, **, * denotes statistically significant at the 1%, 5%, and 10% level, respectively.

CONCLUSION

Islamic finance has been growing rapidly in the last decade, outpacing conventional finance. The GCC region is considered one of the most promising markets with a great potential for growth. One of the securities that can be used to implement and promote such growth in the Islamic Finance industry is Sukuk. However, limited theoretical and empirical literature is available to help understand what those securities are, whether they are different from conventional bonds, and how do corporations decide on issuing such instruments.

In attempts to contribute to this limited yet important area of the literature, my research aims to first establish whether the conventional financing decisions made by listed corporations in the GCC are based on the same factors that influence the financial choice of corporations in developed and developing countries. Then, my objective is to explore whether those factors are similar to the factors that influence the choice of corporations in utilizing Sukuk as a financing method.

I study a sample of publicly listed corporations in Saudi Arabia, United Arab Emirates, and Qatar during a period spanning from 2005 up to the end of 2014. This sample considers to have unique features due to the fact that those corporations operate in tax-free environments, as well as the fact that those corporations operate in environments that issue both conventional and Islamic finance instruments.

I find that factors that are relevant in explaining the capital structure in Saudi Arabia, UAE, and Qatar firms are similar to those documented in the previous literature in different countries. The more fixed assets a firm has in its asset structure, the larger the firm is, the less accounting return it generates, the younger the firm is, and the less dividends it pays out to its shareholders, the higher is the firm's leverage.

But those factors are not similar to the factors that determine the amount of Sukuk in the corporations' capital structures. In fact, models used to explain the financing choice in conventional finance cannot fully explain the choice of Sukuk in corporations' capital structures. Size remains to be a significant determinant of Sukuk issuance. In addition, having other Islamic short-term or long-term investments or other Islamic financing instruments is significantly positively related to Sukuk issuances.

My contribution to the literature includes providing an understanding of what factors determine the conventional financial decision in three fast growing GCC countries. This has not been studied previously in the literature, and this understanding is critical because a firm's financing decision

affects its financial performance, and understanding how firms' decide on their capital structures provides policy makers with an understanding of how to develop opportunities that can help promote growth in the corporations' respective industries. In addition, I provide indirect evidence supporting authors like Godlewski et al. (2013) who suggest that Sukuk are not the same as conventional bonds. Factors used to explain the conventional leverage are not sufficient to explain the Sukuk issuance decision by corporations. Finally, I shed the light on an area that needs further researching to fully understand what are the factors that influence the corporations' choice of issuing Sukuk.

Limitations of this study include not controlling for governance variables such as the size of the board of directors, the independence of the board, CEO-Chair duality, and CEO stock ownership. However, the primary objective of my research is whether Sukuk can be explained by conventional regression models based on financial variables, and I leave factors related to governance for future research.

NOTES

1. Based on International Monetary Fund and the World Bank's note for the G20 countries (2015).
2. Based on Thomson Reuters State of the Global Islamic Economy report 2015/2016.
3. https://islamicbankers.files.wordpress.com/2008/09/aaoifi_sb_sukuk_feb2008_eng.pdf STATE OF THE GLOBAL ISLAMIC ECONOMY REPORT 2015/2016.
4. Please refer to Godlewski et al. (2013), and Oseni and Hassan (2015) for details regarding the different types of Sukuk.
5. Based on Thomson Reuters report (Global Sukuk Market Overview, 2015) the global Sukuk totaled $312.3 Billion dollars in the third quarter of 2014, with issuances growing at a 24.5% rate compared to the third quarter of 2010.
6. Refer to International Monetary Fund and World Bank's note for the G20 countries (2015).
7. As reported by Othman and Faisal (2015).
8. The 12th category which is financial services is not shown in the table as it is excluded from the sample and the analysis.
9. It is common practice to eliminate firms in the utilities industry but since there is no large concentration in the sample coming from those firms, I keep them in the sample. Excluding them from the sample does not affect the results.
10. The companies that had the highest values of Sukuk outstanding as of end of year 2014 in the sample include: Saudi Arabia-based companies such as Saudi Electricity Company (Power and Utilities) and Saudi Basic Industries Corporation

(Oil and Gas), in addition to UAE-based companies such as Emaar Properties PJSC (Real estate) and Aldar Properties PJSC (Real estate).

11. Testing for pecking order theory dictates the use of changes in leverage as the dependent variable (Frank and Goyal, 2003).

12. Studies that focus on the changes in target to debt ratio are mainly the ones utilizing the change in leverage variables as a dependent variable. See for example Leary and Roberts (2010) Fischer, Heinkel, and Zechner (1989) on theories related to the dynamic capital structure.

13. Leary and Roberts (2010), Kayhan and Titman (2007), Frank and Goyal (2003) among others utilize the financial deficit variable in their models.

14. For robustness, I tried testing the model with each independent variable included independently, in this case *Market to Book* is not significant and all other variables remain identical with respect to their significance compared to the original model with all variables included at once. This could be additional evidence that profitability and market to book proxy for investment opportunities in this context and hence including them together might distort the significance (or signs) of their coefficients. However, I kept the model in this format as this is the norm in the literature and including *Market to Book* didn't affect the other variables.

15. One of the limitations of this study is the omission of some of the possible factors that could influence the decision of conventional versus Sukuk issuances which are corporate governance factors and managerial incentives. However, the emphasis of this paper is to focus on the ability of using financial variables to predict leverage thus an evaluation of those factors is left as a possibility for future research.

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LARGE SHAREHOLDERS AND TARGET RETURNS: INTERNATIONAL EVIDENCE

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ABSTRACT

We examine the market valuation of targets with multiple large shareholders (MLS) and single large shareholder (SLS) structures, in an international sample of M&A announcement in 19 countries outside North America. We find that the presence and power of MLS in these firms are negatively associated with abnormal returns and first-bid-to-merger-completion returns, suggesting that MLS mitigate agency problems in the target, and hence their acquisition is perceived as "a loss of good governance." The negative association between MLS targets and returns is stronger in widely held firms suggesting that MLS indeed curb expropriation of minority shareholders. By contrast, when the second largest shareholder in the MLS structure of the target is a family, we find positive cumulative abnormal returns at the merger announcement, suggesting exacerbated agency problems in these firms that should benefit from the "acquisition of

[†]In memory of Jean-Claude Cosset who left us unexpectedly in August 2016.

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good governance." Our evidence is robust to a battery of tests and to addressing potential endogeneity.

Keywords: Corporate governance; CAR; target premium; large shareholders; investor protection; agency costs

JEL classifications: G30; G31; G32; G34; G38

INTRODUCTION

Instances of large shareholders in ownership structures are very common around the world, including the United States (Claessens, Djankov, & Lang, 2000; Faccio & Lang, 2002; Holderness, 2009; La Porta, Lopez-de-Silanes, & Shleifer, 1999; Shleifer & Vishny, 1986). Firms with at least two large shareholders for instance account for more than one-third of publicly listed companies in East Asia (Claessens et al., 2000), and Western Europe (Faccio & Lang, 2002; Laeven & Levine, 2008). The agency theory suggests that an economic rationale for such structures is that large shareholders can act as active monitors of managers who, when lacking incentives to maximize shareholders' wealth, become likely to engage in wealth expropriation activities and tunneling of the firm's corporate resources (Burkart, Gromb, & Panunzi, 1997; Shleifer & Vishny, 1986). This view suggests that large shareholders mitigate agency problems between managers and shareholders. However, as argued by Johnson et al. (2000) and Volpin (2002) among others, controlling shareholders may now be able to extract private benefits of control at the expense of minority shareholders, giving rise to another type of agency problems. Our paper fits in this debate on the link between large shareholders and firm value/performance.

The empirical evidence to date suggests that firms with a single large shareholder (SLS) are subject to significant entrenchment and agency problems that are reflected in lower firm valuations, higher cost of equity (Chen et al., 2009; Claessens, Djankov, Fan, & Lang, 2002; Guedhami & Mishra, 2009; La Porta et al., 2002), higher earnings' management and poor quality of financial reporting (Fan & Wong, 2002, 2005; Haw et al., 2004; Leuz et al., 2003). Conflicts of interests that characterize this ownership structure are between the major/large shareholder and minority shareholders, since the latter are relatively dispersed, and hence less likely to exert a direct influence in the firm's decision making. More recently, several

studies note that corporate ownership structures around the world, more often than otherwise, include in fact more than *one* single shareholder with large voting rights, bringing to the forefront of the debate, the role of structures with multiple large shareholders (MLS).

It is argued in the literature that MLS structures are "a mixed blessing." *On the one hand*, MLS have similar incentives as those of the dominant shareholder, suggesting that they are likely to expropriate minority shareholders for private benefits. This negative view of MLS portrays them as opportunistic investors that "prefer to trade on private information rather than monitor management" (Attig, El Ghoul, & Guedhami, 2009, p. 396). In addition, by colluding with the dominant shareholder, MLS are able to share the private benefits of control (Kahn & Winton, 1998; Zwiebel, 1995). In fact, even if MLS do not collude with the dominant shareholder, a large number of blockholders can hinder the decision-making process in the firm by introducing gridlocks (Edmans & Manso, 2011), leading to inefficiency and underinvestment. This "disagreement effect" that increases with the number of shareholders, "implies that the approval of positive net present value projects becomes more difficult because of the necessary agreement of all members of the controlling group". This coalition formation hypothesis, therefore, predicts higher agency problems in (lower valuation of) MLS structures.

On the other hand, MLS structures can play an effective monitoring role by serving as "… a valuable monitoring function in reducing the diversion of corporate resources" by one single large shareholder (Attig, Guedhami, & Mishra, 2008; Boubaker et al., 2015; Maury & Pajuste, 2005). Indeed, if one (or more) large shareholder chooses to compete for corporate control against (rather than collude with) other large shareholders, he/she will be driven by incentives similar to those of minority shareholders, thus favoring extensive monitoring of managers and other blockholders, which improves overall firm corporate governance. In this vein, Bennedsen and Wolfenzon (2000), and Bloch and Hege (2003) argue that MLS that compete for corporate control help to shift the balance of power to other minority shareholders, shielding them from potential expropriation by closely monitoring managers' actions and decisions. Bloch and Hege (2003) in particular show that the competition for corporate control between two large shareholders to attract minority shareholders will also force both of them to refrain from extracting private benefits of control. This argument also suggests that, instead of colluding with the dominant shareholder to extract private benefits of control, MLS end up sacrificing their own share of such benefits as they prevent expropriation from the dominant

shareholder (Dhillon & Rossetto, 2010; Nenova, 2003). Other studies suggest that the lack of collusion among blockholders helps to reduce information asymmetry because the MLS, being unable to shift the voting outcome in their favor, will vote "with their feet," thus injecting information about the undesired outcome in stock prices (Edmans & Manso, 2011; Noe, 2002).[1] This competition for control in turn reduces the firm's cost of equity financing (Easley & O'Hara, 2004) and increases its valuation. The empirical evidence to date supports this positive view of MLS by showing that MLS firms have higher valuations (Attig et al., 2009; Laeven & Levine, 2008; Maury & Pajuste, 2005) and lower cost of capital (Attig et al., 2008).

In summary, although this issue has been recently addressed in the analytical (Edmans & Manso, 2011; Kahn & Winton, 1998; Zwiebel, 1995) and empirical (Attig et al., 2008; Laeven & Levine, 2008; Maury & Pajuste, 2005) literature, the results on the relation between large shareholders and firm value to date remain inconclusive and ambiguous on both theoretical and empirical grounds. To address this issue, we re-examine in this paper whether the market perceives the presence and voting power of MLS as a moderating factor of the extent of minority shareholders' expropriation by framing our analysis a high agency conflict context, namely Mergers and Acquisitions.

We believe that the context of M&A provides us with a natural laboratory to assess how shareholders gains vary with the change in (relinquishment of) the prevailing ownership structure characterizing acquisition transactions. The M&A literature suggests that these transactions allow to isolate the valuation impact of governance changes (internal or external) from any other confounding factor. For instance, Bris and Cabolis (2008) find that targets that originate from relatively poor investor protection countries command higher merger premium. In addition, targets that are acquired by a bidder that is domiciled in a better investor protection environment tend to exhibit an increase in value, suggesting an external "governance transfer" from the bidder to the target. Applied to internal governance, such transfers can also occur when the target inherits the bidder's internal governance, and relinquishes its own.

To conduct our analysis, we examine target shareholders gains (targets' announcement abnormal returns) for companies that feature MLS and SLS ownership structures: If we posit that MLS structures exacerbate agency problems in the firm (or to lack effectiveness as a monitoring device) (negative view of MLS) then, upon acquisition, we expect MLS targets to be relinquishing "bad governance," and hence gaining by adopting good governance. If, however, MLS structures mitigate agency problems

between the dominant shareholder and minority shareholders (the positive view holds), MLS targets acquired by other firms will be relinquishing "good governance" (i.e., MLS) upon acquisition, and hence losing.

Expressed in terms of shareholders gains measures, if the negative view of MLS holds, we expect the bid price paid to MLS targets to likely include a relatively higher merger premium, and higher merger announcement abnormal returns than comparable SLS targets. This is because upon takeover, the market anticipates the resolution of agency problems embedded in the MLS structure of the firms, leading to expectations of significant improvements in firm value and performance in the long run. Alternatively, if the positive view of MLS stands, we expect the bid price paid to MLS targets to command a lower merger premium as well as lower merger announcement abnormal returns compared to SLS structures that represent the expropriation (high agency problems) outcome. This means that target shareholders gains will be lower since the firms have already enhanced and effective internal corporate governance associated to their MLS structure, hence lower agency problems.

Using a sample of targets featuring at least one dominant shareholder from 19 countries outside North America in completed mergers announced between 1996 and 2004, we find that targets featuring MLS structures exhibit significantly lower announcement abnormal returns (and first-bid-to-merger-completion returns) compared to those featuring SLS structures. The significant negative association between the presence and power of MLS and target returns continues to prevail after we control for firm, industry and deal characteristics, the quality of corporate governance of bidders' and targets' home country, and industry-, year- and country-effects. Moreover, the negative effect of MLS on target returns continues to hold after we tackle potential endogeneity issues, following Laeven and Levine (2009) and Paligorova (2010). In a nutshell, we find strong evidence that MLS firms are valued more than SLS firms, and hence upon acquisition, SLS firms exhibit higher value gains that reflect the market's anticipation of improvements in corporate governance in the long run.

In an additional analysis, we examine whether the market perception of second large shareholders depends on their type. To carry this task, we divide SLS in three groups according to the identity of the major shareholder, namely, *Family*, *State*, and *Widely Held*. We find evidence that in widely held firms, SLS reduce agency problems, as announcement abnormal returns to these targets are negative. Interestingly, we find that family SLS are perceived as exacerbating agency problems since these firms command significantly higher merger returns. This result is consistent with the

evidence that severe agency problems, tunneling and higher risk of expropriation, are observed in family-controlled firms (Bae, Kang, & Kim, 2002; Boubakri, Guedhami, & Mishra, 2009).

Our study contributes to the literature by providing evidence on the value premium that the market assigns to MLS firms when they are targeted in M&A, which we find amounts to about 5%. In doing so, we uphold the findings in the literature that MLS firms embed better corporate governance and enhanced monitoring, thus decreasing agency problems and making them worth more (Attig et al., 2009; Laeven & Levine, 2008; Maury & Pajuste, 2005). We further add to previous studies that focus on the presence of MLS by considering MLS power and voting rights as well. In addition, our international sample of developed and developing countries allows for a wider variation in institutional environments and ownership structures compared to previous studies on either Western Europe (Faccio & Lang, 2002; Laeven & Levine, 2008), or East Asia (Attig et al., 2009; Claessens et al., 2002), which taken separately, represent a relatively homogeneous setting. Finally, we offer the first evidence to our knowledge, on the value of MLS versus SLS firms in M&A by showing that governance transfers at the firm level associated to these transactions are valued by the market.

The rest of the paper is organized as follows: we present the sample and the data in the section "Data and Methodology." We next describe our results of the univariate and multivariate analyses, followed by robustness checks in the section "Empirical Results." The final section concludes.

DATA AND METHODOLOGY

We use a sample of 511 targets completed between 1996 and 2004 from seven East Asian and 12 Western European countries with ownership data available in either Claessens et al. (2000) or Faccio and Lang (2002) studies. Completed merger events and deal characteristics data come from *SDC Platinum – Global Merger and Acquisition Database*. Annual financial data are drawn from WorldScope *Databases* while the daily total return index comes from *DataStream Database*.

Using the DataStream daily total return index for individual targets, we first estimate daily returns. Likewise, using the DataStream country market and global market total return index, we estimate daily index returns as daily changes in a domestic market index (domestic market returns) and daily changes in a global market index (global market returns) respectively.

We start by estimating our main proxy of target abnormal returns, which is the sum of excess target returns over the global market index returns following Faccio, McConnell, and Stolin (2006) and Masulis, Wang, and Xie (2007), computed using a five-day event window (event day −2 to +2 days) (*CAR5*). We also estimate *CAR5_C* based on excess target returns over domestic market returns, and *CAR5_E* based on excess target returns over those estimated using a two factor market model, that uses 200-day estimation window for generating model parameters (−21 to −220 days). The two factors are domestic market returns and global market returns. Cumulative abnormal returns are also calculated from the first bid to the merger completion date using all these three methods, which are denoted as *CarFBC* − for those based on excess over global index return, *CarFBC_C* − for those based on excess over domestic market index returns, and *CarFBC_E* − for those based on excess over estimates from the two factor market model, respectively. The first bid to merger completion returns are consistent with the effective premium received by the target's shareholders. In our tests, we focus on *CAR5* as the main test variable, and use all the other proxies of target abnormal returns in the robustness tests. For the sample of firms with a non-missing value for CAR5, we extract the following annual financial data from *DataStream Database*: *Log Assets* (log of total assets), *Tobin's q*, *ROA* (return on assets) and *Leverage* (total debt by total assets) for the fiscal year ending before the event day. We exclude all events for which one of these data points are missing. Table 1 reports the sample distribution by year.

MLS Variables

Using ownership data available in Claessens et al. (2000) and Faccio and Lang (2002), we create the MLS variables as discussed below. Please note that our sample is restricted to the firms where there is at least one dominant shareholder with 10% or more voting rights.[2]

Presence of MLS

We create two proxies to capture the presence and the extent of MLS in the ownership structure. *Presence2* is coded as a dummy with "1" for firms that have at least two large shareholders featuring at least 10% voting rights each, and "0" otherwise. The second largest shareholder would limit the power of the dominant shareholder to extract private benefits at the

Table 1. Summary Statistics of the Target Returns (CAR) by Year.

Year	$\mu Car5$ (%)	$\mu CarFBC$ (%)	$\sigma Car5$ (%)	$\sigma CarFBC$ (%)	N
1996	8.43	0.82	8.73	13.42	7
1997	21.08	16.30	22.49	30.52	52
1998	20.26	19.61	20.87	25.97	89
1999	17.07	15.26	22.06	29.06	133
2000	16.93	19.21	17.01	20.54	80
2001	16.34	28.30	19.27	24.13	47
2002	13.71	28.37	23.20	26.82	37
2003	5.85	8.51	16.63	19.64	42
2004	7.52	10.70	25.20	25.74	24

Notes: The table presents the summary statistics of the target returns (CAR) of the sample acquisitions by year. The sample includes targets originally drawn from seven East Asian countries represented in Claessens et al. (2000) and 12 Western European countries represented in Faccio and Lang (2002). The CAR5 is the cumulative abnormal returns over market returns for 5-day event window $(-2, +2)$ where market returns are based on DataStream global market index.

expense of minority shareholders if she/he competes for corporate control, suggesting an efficient monitoring role (Attig et al., 2008; Bennedsen & Wolfenzon, 2000). Under this hypothesis (positive view of MLS), MLS firms are likely to be worth more than similar SLS firms, suggesting a lower return for MLS targets upon M&A announcement. In contrast, if the second largest shareholder opts to join hands with the dominant shareholder to extract private benefits of control (negative view of MLS), target firms featuring MLS are expected to show higher returns at the announcement of the transaction, suggesting higher gains to shareholders. The sign of the relation between *Presence2* and *CAR5* therefore depends on whether pre-transaction, MLS play an effective monitoring role, or exacerbate agency problems and expropriation.

A second characteristic of MLS structures, beyond their mere presence, is the number of large shareholders beyond the second largest shareholder that are present in the firm. Edmans and Manso (2011) argue that if there are many blockholders, agreement and consensus become too hard to attain for an efficient monitoring of managers. Bennedsen and Wolfenzon (2000) also support this argument that the presence of several blockholders reduces efficient decision-making, and make monitoring costs so prohibitive that multiple large shareholders will be discouraged to engage in effective monitoring (Dhillon & Rossetto, 2010). This suggests lower firm valuation as the number of blockholders increases.

Existing empirical evidence, however, also suggests that an increase in the number of blockholders decreases information asymmetry implying a positive valuation effect of MLS. In Gallagher et al. (2013) MLS trading volume (that depends on the number of blockholders) is shown to be negatively associated to trading profits. In the same vein, Gorton, Huang, and Kang (2016) suggest that the increase in the number of blockholders increases price informativeness. In addition, research shows that MLS trading disciplines managerial compensation (Smith & Swan, 2008), suggesting a positive valuation effect of the number of blockholders. To capture the number of blockholders, we create *Presence2345*, which represents the total number of MLS beyond the dominant shareholder, with a maximum of 4. Overall, the sign of the relation between *Presence2345* and *CAR5* will depend on whether pre-transaction, MLS structures have a positive or a negative valuation effect.

Power of MLS

We create two proxies to measure the absolute power of MLS, namely the voting power of the second largest shareholder (*Vote2*), and that of the four large shareholders beyond the dominant shareholder (*Vote2345*). We supplement these measures of absolute power with two additional proxies to measure the power of MLS relative to the dominant shareholder, namely *Vote2/1 Ratio* and *Vote2345/1 Ratio*. According to Dhillon and Rossetto (2010, p. 4) "*when they [shareholders beyond the dominant shareholder] do buy a larger fraction of shares, their preferences move closer to those of the initial large shareholder! … since the conflicts of interest are endogenous, it is not trivial to show that having a larger size will be beneficial to outside investor since the large size itself reduces the conflict of interest between the initial owner and large outside investors*." The efficient monitoring hypothesis suggests that the power of MLS should be positively associated with pre-transaction value premium, and hence negatively associated with target returns upon the M&A announcement.

Role of Family versus Non-Family MLS

Whether the second largest shareholder uses its presence or power to mitigate or exacerbate agency problems may depend on its type. Therefore, we start by dividing all second largest shareholders into three categories

and create a dummy variable for each. *Family2* takes the value of 1 if the second largest shareholder is a family or individual, 0 otherwise. *State2* takes the value of 1 if the second large shareholder is the government or a government agency, 0 otherwise. *Widely2* takes the value 1 if the second large shareholder is a widely held corporation or institutions, 0 otherwise. As discussed above, the theory predicts both possibilities (i.e., monitoring by the second largest shareholder or helping to extract private benefits of control) as equally likely. Indeed, the second largest shareholder may be associated with value destruction, for she/he may have incentives to create environments that help to extract private benefits of control (Kahn & Winton, 1998; Winton, 1993; Zwiebel, 1995). Also, MLS may have little incentives to take private benefits of control, and could instead use their power to monitor the activities of the largest shareholder (and managers) to the benefit of minority shareholders (Bennedsen & Wolfenzon, 2000; Bloch & Hege, 2003; Dhillon & Rossetto, 2010; Nenova, 2003). The incentives to create environments to extract private benefits by the second largest shareholder are likely to be higher, if she/he is a family or individual, rather than an institution and the government for several reasons: *First*, families have a desire to transfer control to future generations, and their large stake in the firm often leaves them with an undiversified wealth (Anderson & Reeb, 2003) leading them to shun value maximizing high operating risk projects in favor of low risk or risk diversifying projects, in order to reduce the possibility of bankruptcy (John et al., 2008). *Second*, the private benefits extracted by widely held institutions are divisible among a large number of their shareholders, while those by family or individual are not divisible (Ellul, Guntay, & Lel, 2009). As a consequence, families have incentives to extract such benefits and the role of family as the second largest shareholder is less predictable. This in turn suggests that, unlike firms featuring other types of SLS, targets featuring family as the SLS may not be as valued, and therefore may not suffer as much the cost of relinquishing governance. Moreover, if the second largest shareholder is a family then it is expected to exacerbate agency problems. This suggests that SLS targets should be expected to exhibit a positive market reaction upon relinquishing "bad governance."

Control Variables

We control for firm, industry and deal characteristics following the existing literature (Bradley, Desai, & Kim, 1988; Bris & Cabolis, 2008; Wang & Xie, 2009),

all of which are defined in the appendix. For the fiscal year-end proceeding the event year, we estimate natural log of total assets (*Log Assets*), *Tobin's q*, Return on Assets (*ROA*), and total debt to total assets (*Leverage*). We measure competitiveness of the target's industry using the *Hersfindhal* index. Among the deal characteristics, friendly mergers (*Friendly*), deals involving tender offer (*Tender Offer*), cross-border merger (*Cross-border*), cash only consideration (*Cash Only*), and ownership status dummy for bidder (*Private Bidder*) are included. We also control for industry effects using industry dummies created using Fama-French 12 industries[3] classification, year effects using year dummies, and country effects using country dummies.

The properties of tests and other regression variables are reported in Table 2, starting with properties of ownership variables in Panel A, target

Table 2. Summary Statistics of Key Variables.

Variable	*N*	Mean	Standard Deviation	Q1	Median	Q3
Panel A: Ownership structure variables						
Presence2	511	0.46	0.50	0.00	0.00	1.00
Vote1	511	7.12	8.57	0.00	0.00	12.50
Vote2/1	511	0.32	0.37	0.00	0.00	0.67
Presence2345	511	0.66	0.88	0.00	0.00	1.00
Vote2345	511	9.80	13.81	0.00	0.00	15.00
Vote2345/1	511	0.44	0.59	0.00	0.00	0.78
Panel B: Control variables – Target characteristics						
Log Assets	511	12.38	1.76	11.18	12.11	13.44
Tobin's q	511	0.97	0.91	0.55	0.74	0.99
ROA	511	0.06	0.08	0.00	0.06	0.11
Leverage	511	0.24	0.20	0.08	0.21	0.36
Panel C: Control variables – Deal characteristics						
Industry Competition	511	0.06	0.04	0.04	0.05	0.06
Friendly	511	0.96	0.19	1.00	1.00	1.00
Tender Offer	511	0.79	0.41	1.00	1.00	1.00
Cross-border	511	0.25	0.44	0.00	0.00	1.00
All Cash Deal	511	0.35	0.48	0.00	0.00	1.00
Private Bidder	511	0.21	0.41	0.00	0.00	0.00

Notes: The table presents the summary statistics of control and test variables. The sample includes targets originally drawn from seven East Asian countries represented in Claessens et al. (2000) and 12 Western European countries represented in Faccio and Lang (2002).

characteristics in Panel B and deal characteristics in Panel C. We observe that about 46% of the firms with a dominant shareholder have at least two large shareholders. Table 3 reports the correlation coefficients between our variables. They do not appear too large to raise concern for multicolliniarity.

EMPIRICAL RESULTS

Univariate Results

Table 4 presents a univariate test of target returns (*CAR5* and *CarFBC*) between firms with a single large shareholder (SLS) and those with multiple large shareholders (MLS). Indeed, we note that MLS targets exhibit a substantially lower market reaction to M&A announcement compared to SLS firms, both with and without an adjustment for country effects. The adjustment for country effects mitigates the concern that the market reaction may be due either to an overall change in stock prices in that particular country, or to the potential change in the country level governance environment following the merger or acquisition. First, we test the difference in *CAR5* adjusted for country medians (*adjCAR5*) between SLS and MLS targets, and find that *adjCAR5* are significantly lower for MLS firms. Second, we test the difference in first bid to merger completion abnormal returns (*CarFBC*) adjusted for country medians (*adjCarFBC*), which is significantly lower for MLS targets.[4] These results provide initial evidence that there is a value premium for having MLS in the ownership structure; therefore, in acquisitions of such targets, the premium embedded in the offer price is not as high as that for targets with one single dominant shareholder. In other words, SLS targets are significantly undervalued prior to merger announcement, and experience upon acquisition a significantly higher value gain for two reasons (i) the market positively reacts to the relinquishment of bad governance, and (ii) bidders are more likely to pay higher premium for these undervalued targets. Conversely for MLS targets, (i) the market negatively reacts to the removal of good internal governance, and (ii) bidders are more likely to pay lower relative premium due to the value premium embedded in their pre-announcement market price. The average difference in the announcement returns for MLS and SLS targets is the value premium for having MLS in the ownership structure. This finding provides further evidence in support of prior literature that MLS structures help mitigate agency problems between the dominant shareholder and

Table 3. Pairwise Correlation Coefficients.

Variable	*Presence2*	*Vote2*	*Vote2/1*	*Presence2345*	*Vote2345*	*Vote2345/1*	*Log Assets*	*Tobin's* q	*ROA*	*Leverage*	*Industry Competition*	*Friendly*	*Tender Offer*	*Cross-border*	*All Cash Deal*
Vote2	0.86														
Vote2/1	0.87	0.81													
Presence2345	0.80	0.75	0.72												
Vote2345	0.74	0.87	0.70	0.92											
Vote2345/1	0.76	0.72	0.87	0.90	0.85										
Log Assets	−0.11	−0.09	−0.12	−0.12	−0.10	−0.12									
Tobin's q	−0.03	−0.03	−0.04	−0.04	−0.04	−0.04	−0.15								
ROA	0.11	0.08	0.09	0.09	0.07	0.08	−0.15	0.16							
Leverage	−0.05	−0.04	−0.01	−0.08	−0.07	−0.03	0.29	−0.04	−0.26						
Industry Competition	0.02	0.00	0.01	0.05	0.04	0.05	−0.10	0.01	0.05	−0.06					
Friendly	−0.04	−0.03	−0.05	−0.01	0.00	−0.03	−0.09	0.05	0.06	−0.02	−0.04				
Tender Offer	0.12	0.01	0.04	0.05	−0.01	0.02	−0.24	0.08	0.21	−0.11	0.03	−0.01			
Cross-border	0.10	0.04	0.07	0.08	0.04	0.07	−0.02	0.05	0.06	−0.06	0.07	0.03	0.14		
All Cash Deal	0.09	0.04	0.04	0.05	0.02	0.04	−0.12	−0.13	0.06	0.02	0.07	0.00	0.25	0.18	
Private Bidder	0.06	0.05	0.01	0.05	0.04	0.00	−0.19	−0.12	0.08	−0.11	−0.01	0.08	0.15	−0.06	0.21
N	511	511	511	511	511	511	511	511	511	511	511	511	511	511	511

Notes: The table represents the pairwise correlation coefficients of all test and control variables. The sample includes targets from seven East Asian countries represented in Claessens et al. (2000) and 12 Western European countries represented in Faccio and Lang (2002).

Table 4. Univariate Tests of Difference in CAR5 and FBC across Ownership Structures.

Owners	Mean		Standard Deviation		*T*-stat
	SLS	MLS	SLS	MLS	MLS − SLS
adjCAR5	6.21%	2.21%	21.15%	18.70%	−2.27
adjFBC	5.04%	0.05%	26.86%	24.29%	−2.21
N	276	235	276	235	

Notes: This table presents univariate test of difference in target announcement returns (CAR5) and the first bid to completion (FBC) between firms that have single dominant shareholder (SLS) and multiple large shareholder structure (MLS). The sample includes targets from seven East Asian countries represented in Claessens et al. (2000) and 12 Western European countries represented in Faccio and Lang (2002).

other minority shareholders by monitoring managers or competing for corporate control (Attig et al., 2008; Mishra, 2011). More importantly, the governance role of MLS appears to be valued by the market. To test these findings more thoroughly, we switch below to a multivariate framework using a full set of control variables.

Multivariate Analysis

In the sample of merger announcements made by the firms featuring at least one large shareholder, we compare the target's announcement period returns (*CAR5*) and first bid to merger completion returns (*CarFBC*) (Bargeron, Schlingemann, Stulz, & Zutter, 2008) between firms with SLS and MLS. We start by regressing *CAR5* on *Presence2*, industry dummies and country dummies. The *Presence2*, which is an indicator variable featuring "1" for MLS targets, and 0 otherwise, has a negative and significant coefficient consistent with our univariate results. In Model 2, we continue to find similar results after we add firm, industry, and deal characteristics. This evidence supports two important findings in the literature. First, MLS firms are generally valued higher than SLS firms (Attig et al., 2009; Laeven & Levine, 2008) therefore MLS firms experience a lower value appreciation on their acquisitions than SLS firms. The acquirer's offer price depends on the fundamentals of the target that the acquirer inherits, and brings under the acquirer's own corporate governance. Therefore, it will tend to make the same bid for two different targets with the same fundamentals

irrespective of the latter's corporate governance. However, before acquisition, the similar fundamentals would drive different market valuations because of the fundamentals that are not inherited by the acquirer upon acquisition. The targets' corporate governance and ownership is one of those fundamentals that remain un-inherited by the acquirer upon acquisition. Evidently, MLS and SLS targets are likely to have different valuations before acquisition, because in the absence of other large shareholders, the dominant shareholder has incentives and power to extract private benefits of control.

Second, these results may also imply that the market assigns a value discount for relinquishing MLS structures, provided MLS play a positive governance role. The second implication supports a strand of the merger literature that suggests the existence of governance transfers from the acquirer to the management of target's assets. This literature also suggests a positive (negative) market reaction upon acquisition by an acquirer from a relatively better governance regime (Bris & Cabolis, 2008; Bris et al., 2008; Rossi & Volpin, 2004) in cross-border mergers. It also supports Wang and Xie (2009) who find that target abnormal returns and combined abnormal returns of targets and acquirers are increasing in governance (measured by anti-takeover provisions) differences between the target and the acquirer, where governance difference is the extent to which targets' governance is weaker than the acquirers' governance.

Among the target's firm, industry and deal characteristics, we find that *CAR5* is not significantly associated with *Log Assets*, *ROA*, and *Leverage*. These findings are largely consistent with Wang and Xie (2009). However, it is significantly negatively associated with *Tobin's q* of targets suggesting that targets with higher relative value show lower value gain upon acquisition. The coefficient of *Industry competition*, measured by the *Herfindhal Index* of sales of firms in each of the Fama and French 48 industries, and of *Friendly* mergers are negative but insignificant. However, the coefficient of *Tender Offer* is positive and significant, consistent with Wang and Xie (2009), suggesting that target's shareholders experience greater benefits in mergers involving tender offers. Similarly, targets benefit more in *Cross-border* mergers as suggested by its positive and significant coefficient.

We extend our analysis to other properties of target ownership structures. In model 3, we find that *Vote2* – measuring the absolute power of the second largest shareholder – is negatively (significant at 10% level) associated with *CAR5*, and similarly, in model 4, *Vote2/1* – measuring the power of the second large shareholder in relation to the dominant shareholder – is negatively (significant at 1% level) associated with *CAR5*.

Consistent with earlier findings, and our expectation, this suggests that both absolute and relative power of the second large shareholder help to mitigate agency problems, which increases the valuation of the firms and results in a lower takeover premium for these targets. However, we do not find the presence and power of the largest shareholder beyond the second largest shareholder to be significantly associated with *CAR5*.

Type of second largest shareholder

The literature suggests that the identity of the large shareholders affects their incentives to monitor or expropriate. For example, as private benefits extracted by family owners are not divisible, while those extracted by institutions or state owners are highly divisible among their owners. Therefore, family has relatively higher incentives to expropriate. Does this notion apply to the type of the MLS as well? To answer this question, we test the market reaction to the acquisitions of targets with different types of SLS. We divide SLS in three types, namely family, state, and widely held and create a dummy for each taking the value of 1 if the shareholder is of a certain type, zero otherwise. In Table 5 we report the results of our main model, which also includes the SLS type dummies. Model 1 includes *Family2*, which takes the value of 1 if the second largest shareholder is a family, zero otherwise. The coefficient of *Family2* is positive and significant suggesting that the market reacts relatively positively to the sale of a firm featuring family as the second large shareholder. This suggests that the family shareholder may have incentives to collude with the dominant shareholder to extract private benefits of control, making such targets likely to be relatively less valued prior to takeover. While the coefficient of State2 is insignificant, the significant negative coefficient of *Widely2* suggests that widely held SLS are perceived to be less likely to extract private benefits, in particular because the benefits they extract are divisible among a large number of shareholders. Therefore, the second largest shareholder has lower incentives to indulge into rent extraction or support the activities of the dominant shareholder making it more difficult for the dominant shareholder to tunnel the firm's resources. These findings support a large strand of the literature showing that family control is associated with value destruction, higher expropriation of minority shareholders (Bae et al., 2002; Bertrand, Mehta, & Mullainathan, 2002), and higher cost of equity (Boubakri et al., 2009). The firms featuring family as the second largest shareholder, which according to this literature are likely to sell at a discount prior to the merger, experience a significant positive market reaction when targeted by other firms.

Table 5. Target Abnormal Returns and MLS and type of Second Large Shareholder.

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5
Presence2	−0.0709***	−0.0584**	−0.0398	
	(−3.857)	(−2.420)	(−1.587)	
Family2	0.0797**			0.0265
	(2.226)			(0.697)
State2		0.0506		0.0134
		(0.530)		(0.159)
Widely2			−0.0429**	−0.0619***
			(−2.850)	(−4.241)
Firm characteristics				
Log Assets	−0.0020	−0.0027	−0.0026	−0.0014
	(−0.322)	(−0.409)	(−0.392)	(−0.204)
Tobin's q	−0.0252***	−0.0236***	−0.0249***	−0.0245***
	(−4.040)	(−3.845)	(−3.995)	(−3.742)
ROA	0.0779	0.0997	0.0969	0.0693
	(0.640)	(0.780)	(0.773)	(0.546)
Leverage	−0.0324	−0.0384	−0.0349	−0.0359
	(−0.455)	(−0.611)	(−0.521)	(−0.490)
Deal and industry characteristics				
Hersfindhal	−0.1625	−0.2001	−0.2190	−0.2436
	(−1.091)	(−1.555)	(−1.535)	(−1.466)
Friendly	−0.0443	−0.0338	−0.0379	−0.0293
	(−1.006)	(−0.692)	(−0.921)	(−0.580)
Tender Offer	0.1001***	0.1039***	0.1061***	0.1080***
	(4.162)	(3.947)	(4.630)	(4.097)
Cross-border	0.0537***	0.0512***	0.0510***	0.0491***
	(4.783)	(5.327)	(4.702)	(4.575)
Cash Only	0.0096	0.0110	0.0095	0.0090
	(0.651)	(0.687)	(0.648)	(0.623)
Private Bidder	−0.0294	−0.0276	−0.0294	−0.0326
	(−1.506)	(−1.347)	(−1.451)	(−1.704)
Industry effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes

Table 5. (*Continued*)

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5
Constant	0.1953***	0.2017**	0.1816*	0.1987**
	(8.354)	(2.006)	(1.779)	(1.971)
Observations	511	511	511	511
Adjusted *R*-squared	0.085	0.117	0.105	0.114

Notes: The table presents relationship between target announcement abnormal returns and presence, voting rights and the type of the second largest shareholder in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Cumulative abnormal returns (CARs) are estimated using excess returns over DataStream global market index for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5%, and 1% level, respectively.

What about the type of the dominant shareholder? International evidence suggests that family controlled firms are more prone to expropriation of minority shareholders compared to other types of firms (Boubakri et al., 2010). Assuming that family ownership is an indication of bad governance, one expects that targets featuring family as the dominant shareholder to be less valued prior to the acquisition. To determine the role of the second largest shareholder in interaction with family, we split our sample of targets in Table 6 into two groups, of family-controlled (Family1) and non-family-controlled (Non-Family) targets. We then examine the role of the second large shareholder in these firms. Models 1 and 2 show that in the firms featuring non-family dominant shareholders Presence2 and Vote2/1 are significantly and negatively associated with CAR5. This suggests that non-family firms with an MLS ownership structure are perceived as having better governance such that upon acquisition (upon relinquishing such governance structure), there is a significant negative market reaction.

In summary, the findings in Table 7 highlight the importance of ownership structures with MLS in mitigating firms' agency problems, and suggest that the market effectively puts a value to the presence and power of MLS, so that relinquishing this ownership structure is counterproductive. Furthermore, the findings in Table 5 suggest that the type of the second largest shareholder has important implications for the role of MLS in firm's agency problems. The family as the second largest shareholder appears to

Table 6. Target Abnormal Returns, MLS in Target Ownership and Dominant Shareholder Type.

Dominant Shareholder Type	Non-Family1		Family1	
Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5
Presence2	−0.0730**		0.0193	
	(−2.914)		(0.261)	
Vote2/1		−0.0742*		−0.0057
		(−2.154)		(−0.069)
Firm characteristics				
Log Assets	−0.0040	−0.0039	−0.0022	−0.0019
	(−0.450)	(−0.433)	(−0.193)	(−0.171)
Tobin's q	−0.0231**	−0.0231**	−0.0307**	−0.0296**
	(−2.899)	(−2.733)	(−2.490)	(−2.583)
ROA	0.1093	0.1131	−0.2803	−0.2513
	(0.626)	(0.634)	(−0.726)	(−0.705)
Leverage	−0.0156	−0.0111	−0.0623	−0.0644
	(−0.165)	(−0.115)	(−0.784)	(−0.847)
Deal and industry characteristics				
Hersfindhal	−0.2373	−0.2828**	−0.2210	−0.2435
	(−1.707)	(−2.290)	(−0.439)	(−0.498)
Friendly	−0.0504	−0.0458	0.0082	0.0173
	(−1.207)	(−1.201)	(0.114)	(0.243)
Tender Offer	0.1428***	0.1421***	0.0836	0.0841
	(6.319)	(6.565)	(1.455)	(1.528)
Cross-border	0.0452*	0.0440*	0.0730*	0.0742**
	(1.962)	(1.937)	(2.185)	(2.354)
Cash Only	0.0023	0.0003	0.0260	0.0252
	(0.091)	(0.014)	(0.506)	(0.521)
Private Bidder	−0.0139	−0.0144	−0.0651	−0.0648
	(−0.501)	(−0.505)	(−1.362)	(−1.341)
Industry effects	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes
Clustering	Yes	Yes	Yes	Yes
Constant	0.1828	0.1736	0.1460	0.1441
	(1.453)	(1.446)	(1.035)	(1.005)

Table 6. (*Continued*)

Dominant Shareholder Type	Non-Family1		Family1	
Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5
Observations	372	372	139	139
Adjusted *R*-squared	0.173	0.163	−0.043	−0.045

Notes: The table presents relationship between target announcement returns (Car5) and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Car5 is cumulative abnormal returns for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5% and 1% level, respectively.

exacerbate agency problems, while widely held structure as the second large shareholder mitigates them.

Robustness Checks

The results presented in Table 7 have several limitations as they are based on a set of assumptions and estimation techniques. Therefore, in this section, we assess the robustness of our main results to relaxing such assumptions and using new estimation techniques to generate the dependent variable.

Basic Sensitivity Tests

While we use robust standard errors in Table 7, this does not address potential cross-sectional correlation within industries. Therefore, in Table 8 we replicate our core tests after correcting for industry clustering, and find that our results remain the same. One minor exception is that we find *Presence2345* to be significantly and negatively associated with *CAR5* (which was insignificant in our main tests as reported in Table 4). This suggests that the presence of more shareholders is significantly valuable. Similarly, in Table 7, we do not control for year effects and use *CAR5* estimated in excess of the expected daily returns as per the single factor market model, where the market index is DataStream market index of the target's country. In Table 9, we replicate our key tests using year-fixed effects (in models 1 and 2), the abnormal returns estimated in excess of

Table 7. Target Abnormal Returns and MLS in Target Ownership.

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5	(5) Car5	(6) Car5	(7) Car5
Presence2	−0.0487**	−0.0562***					
	(−2.524)	(−2.874)					
Vote2			−0.0018*				
			(−1.719)				
Vote2/1				−0.0657***			
				(−2.646)			
Presence2345					−0.0187		
					(−1.642)		
Vote2345						−0.0008	
						(−1.233)	
Vote2345/1							−0.0243
							(−1.453)
Firm characteristics							
Log Assets		−0.0026	−0.0019	−0.0025	−0.0021	−0.0018	−0.0020
		(−0.459)	(−0.336)	(−0.452)	(−0.370)	(−0.311)	(−0.347)
Tobin's q		−0.0236***	−0.0226***	−0.0238***	−0.0231***	−0.0224***	−0.0229***
		(−2.904)	(−2.796)	(−2.912)	(−2.849)	(−2.780)	(−2.805)
ROA		0.0973	0.0817	0.0976	0.0812	0.0763	0.0816
		(0.875)	(0.732)	(0.875)	(0.730)	(0.685)	(0.732)
Leverage		−0.0382	−0.0429	−0.0379	−0.0442	−0.0446	−0.0417
		(−0.638)	(−0.710)	(−0.631)	(−0.734)	(−0.739)	(−0.691)
Deal & industry characteristics							
Industry Competition		−0.2015	−0.2303	−0.2217	−0.2148	−0.2286	−0.2219
		(−1.043)	(−1.157)	(−1.129)	(−1.078)	(−1.140)	(−1.108)

Table 7. (*Continued*)

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5	(5) Car5	(6) Car5	(7) Car5
Friendly		−0.0408	−0.0350	−0.0395	−0.0352	−0.0330	−0.0349
		(−0.821)	(−0.704)	(−0.798)	(−0.698)	(−0.659)	(−0.695)
Tender Offer		0.1023***	0.0986***	0.1010***	0.0999***	0.0991***	0.1012***
		(3.714)	(3.498)	(3.637)	(3.555)	(3.477)	(3.603)
Cross-border		0.0506**	0.0468**	0.0503**	0.0477**	0.0463*	0.0479**
		(2.137)	(1.971)	(2.122)	(1.996)	(1.945)	(2.007)
Cash Only		0.0103	0.0099	0.0109	0.0093	0.0096	0.0099
		(0.474)	(0.451)	(0.499)	(0.424)	(0.436)	(0.454)
Private Bidder		−0.0274	−0.0285	−0.0302	−0.0295	−0.0295	−0.0308
		(−1.250)	(−1.290)	(−1.384)	(−1.346)	(−1.337)	(−1.406)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.1953***	0.2017**	0.1816*	0.1987**	0.1834*	0.1739*	0.1781*
	(8.354)	(2.006)	(1.779)	(1.971)	(1.778)	(1.678)	(1.738)
Observations	511	511	511	511	511	511	511
Adjusted *R*-squared	0.085	0.117	0.105	0.114	0.106	0.103	0.105

Notes: The table presents relationship between target announcement abnormal returns and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Cumulative abnormal returns (CARs) are estimated using excess returns over DataStream global market index for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5%, and 1% level, respectively.

Table 8. Robustness: Target Announcement Returns and MLS in Target Ownership (Cluster).

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5	(5) Car5	(6) Car5
Presence2	−0.0562**					
	(−2.614)					
Vote2		−0.0018*				
		(−1.920)				
Vote2/1			−0.0657**			
			(−2.261)			
Presence2345				−0.0187*		
				(−1.811)		
Vote2345					−0.0008	
					(−1.341)	
Vote2345/1						−0.0243
						(−1.487)
Firm characteristics						
Log Assets	−0.0026	−0.0019	−0.0025	−0.0021	−0.0018	−0.0020
	(−0.394)	(−0.281)	(−0.382)	(−0.307)	(−0.256)	(−0.287)
Tobin's q	−0.0236***	−0.0226***	−0.0238***	−0.0231***	−0.0224***	−0.0229***
	(−3.822)	(−3.776)	(−3.782)	(−3.843)	(−3.769)	(−3.736)
ROA	0.0973	0.0817	0.0976	0.0812	0.0763	0.0816
	(0.774)	(0.649)	(0.763)	(0.645)	(0.609)	(0.642)
Leverage	−0.0382	−0.0429	−0.0379	−0.0442	−0.0446	−0.0417
	(−0.605)	(−0.681)	(−0.615)	(−0.675)	(−0.688)	(−0.643)
Deal and industry characteristics						
Industry Competition	−0.2015	−0.2303	−0.2217	−0.2148	−0.2286	−0.2219
	(−1.507)	(−1.638)	(−1.515)	(−1.560)	(−1.622)	(−1.564)

Table 8. (*Continued*)

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5	(5) Car5	(6) Car5
Friendly	−0.0408	−0.0350	−0.0395	−0.0352	−0.0330	−0.0349
	(−0.998)	(−0.851)	(−1.000)	(−0.822)	(−0.779)	(−0.832)
Tender Offer	0.1023***	0.0986***	0.1010***	0.0999***	0.0991***	0.1012***
	(4.205)	(4.161)	(4.201)	(4.120)	(4.134)	(4.123)
Cross-border	0.0506***	0.0468***	0.0503***	0.0477***	0.0463***	0.0479***
	(4.734)	(4.400)	(4.882)	(4.563)	(4.373)	(4.875)
Cash Only	0.0103	0.0099	0.0109	0.0093	0.0096	0.0099
	(0.659)	(0.621)	(0.696)	(0.578)	(0.594)	(0.614)
Private Bidder	−0.0274	−0.0285	−0.0302	−0.0295	−0.0295	−0.0308
	(−1.337)	(−1.386)	(−1.566)	(−1.498)	(−1.474)	(−1.606)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.2017*	0.1816	0.1987*	0.1834	0.1739	0.1781
	(2.051)	(1.786)	(2.065)	(1.679)	(1.594)	(1.660)
Observations	511	511	511	511	511	511
Adjusted *R*-squared	0.117	0.105	0.114	0.106	0.103	0.105

Notes: The table presents relationship between target announcement abnormal returns and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Cumulative abnormal returns (CARs) are estimated using excess returns over DataStream global market index for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors with industry clustering are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5%, and 1% level, respectively.

Table 9. Robustness: Target Announcement Returns and MLS in Target Ownership.

Dependent Variable	(1) Car5	(2) Car5	(3) Car5_C	(4) Car5_C	(5) Car5_E	(6) Car5_E
Presence2	−0.0506**		−0.0547***		−0.0550***	
	(−2.510)		(−2.790)		(−2.796)	
Vote2/1		−0.0599**		−0.0656***		−0.0656***
		(−2.331)		(−2.611)		(−2.610)
Firm characteristics						
Log Assets	−0.0028	−0.0028	−0.0024	−0.0024	−0.0029	−0.0029
	(−0.496)	(−0.497)	(−0.429)	(−0.430)	(−0.533)	(−0.531)
Tobin's q	−0.0252***	−0.0254***	−0.0224***	−0.0226***	−0.0243***	−0.0245***
	(−2.950)	(−2.950)	(−2.741)	(−2.751)	(−3.023)	(−3.034)
ROA	0.1217	0.1234	0.0950	0.0962	0.0998	0.1007
	(1.102)	(1.113)	(0.856)	(0.864)	(0.900)	(0.905)
Leverage	−0.0431	−0.0431	−0.0500	−0.0496	−0.0504	−0.0500
	(−0.713)	(−0.712)	(−0.825)	(−0.815)	(−0.829)	(−0.819)
Deal and industry characteristics						
Industry Competition	−0.2257	−0.2441	−0.2160	−0.2350	−0.1976	−0.2169
	(−1.174)	(−1.249)	(−1.145)	(−1.227)	(−1.019)	(−1.102)
Friendly	−0.0413	−0.0402	−0.0437	−0.0427	−0.0410	−0.0399
	(−0.863)	(−0.841)	(−0.871)	(−0.852)	(−0.829)	(−0.809)
Tender Offer	0.0854***	0.0843***	0.1030***	0.1017***	0.0954***	0.0942***
	(2.897)	(2.840)	(3.767)	(3.695)	(3.543)	(3.474)
Cross-border	0.0431*	0.0425*	0.0515**	0.0514**	0.0509**	0.0507**
	(1.799)	(1.776)	(2.170)	(2.162)	(2.141)	(2.131)

Table 9. (*Continued*)

Dependent Variable	(1) Car5	(2) Car5	(3) Car5_C	(4) Car5_C	(5) Car5_E	(6) Car5_E
Cash Only	0.0192	0.0199	0.0098	0.0104	0.0118	0.0124
	(0.845)	(0.877)	(0.448)	(0.474)	(0.535)	(0.560)
Private Bidder	−0.0247	−0.0274	−0.0292	−0.0320	−0.0331	−0.0359
	(−1.134)	(−1.258)	(−1.329)	(−1.460)	(−1.488)	(−1.620)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	No	No	No	No
Constant	0.2114**	0.2089**	0.2030**	0.2013**	0.2145**	0.2125**
	(2.147)	(2.120)	(2.017)	(1.996)	(2.165)	(2.139)
Observations	511	511	511	511	511	511
Adjusted *R*-squared	0.117	0.114	0.116	0.114	0.117	0.115

Notes: The table presents robustness tests for the relationship between target announcement abnormal returns and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Cumulative abnormal returns (CARs) are estimated using excess returns over DataStream global market index (CAR5), excess returns over DataStream country market index (Car5_C), and excess returns over the two factor (DataStream global and country market indices) market model (Car5_E) for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5% and 1% level, respectively.

DataStream country market index (*CAR5_C* in models 3 and 4), and the abnormal returns estimated in excess of expected returns estimated using the two factor model featuring DataStream country market index and DataStream global market index (*CAR5_E* in models 5 and 6). In all these models, we find that our results relating to the effect of presence and relative power of MLS continue to hold. Further, our main results are based on the abnormal returns estimated using a five-day event window. To test the sensitively of our results to the choice of the event window, we replicate our results using an 11-day event window (*CAR11*), and a 3-day event window (*CAR3*). In untabulated results, our conclusions continue to hold when we use *CAR11* or *CAR3*.

Further, the target's shareholders do not realize the gains from the sale of the firm until the merger is completed. Therefore, the abnormal returns measured over the five-day event window do not necessarily represent both premiums received for target shares, and the effect of relinquishing existing governance. To mitigate this concern, we follow Bargeron et al. (2008) and estimate cumulative abnormal returns (CAR) of the targets from the first bid to the completion date (FBC). We denote these abnormal returns as *CarFBC*, *CarFBC_C*, and *CarFBC_E*, respectively, for abnormal returns estimated as (i) excess over expected returns based on the market model with the DataStream country market index, (ii) excess over the returns on DataStream country market index, and (iii) excess over expected returns from two factor model using DataStream country and global market index. We present the results of the tests that use these dependent variables in Table 10. In all models reported in Table 10, our key findings remain unchanged to the use of alternative dependent variables.

Country Effects and Investor Protection

First, in our data the United Kingdom is disproportionately represented while countries such as Austria and Indonesia have as low as one target firm represented in the sample. Therefore, it is crucial that our results hold in the full sample with country effects, in the sample that includes only the United Kingdom, and in the sample that excludes countries that are thinly represented. In Table 11, we start by excluding in Model 1 all countries that have only one firm represented in the sample, in Model 2 the countries that have two or less firms, in Model 3 the countries that have three or less firms represented and in Model 4 all countries other than the United Kingdom. Our results continue to hold in the full sample, the subsample of targets from the United Kingdom only, and the subsamples that exclude the countries that are thinly represented.

Table 10. Robustness: Target Returns from Bid to Completion and MLS in Target Ownership.

Dependent Variable	(1) CarFBC	(2) CarFBC	(3) CarFBC_C	(4) CarFBC_C	(5) CarFBC_E	(6) CarFBC_E
Presence2	−0.0619**		−0.0543**		−0.0543*	
	(−2.534)		(−2.259)		(−1.929)	
Vote2/1		−0.0716**		−0.0701**		−0.0684*
		(−2.355)		(−2.245)		(−1.873)
Firm characteristics						
Log Assets	−0.0136*	−0.0135*	−0.0107	−0.0108	−0.0121	−0.0121
	(−1.721)	(−1.707)	(−1.396)	(−1.408)	(−1.295)	(−1.297)
Tobin's q	−0.0296**	−0.0297**	−0.0240**	−0.0243**	−0.0155	−0.0159
	(−2.403)	(−2.414)	(−2.138)	(−2.170)	(−1.120)	(−1.148)
ROA	0.1577	0.1576	0.1242	0.1277	−0.1477	−0.1450
	(1.090)	(1.079)	(0.870)	(0.888)	(−0.827)	(−0.806)
Leverage	0.0300	0.0303	0.0035	0.0045	−0.0470	−0.0463
	(0.381)	(0.383)	(0.046)	(0.059)	(−0.542)	(−0.533)
Deal and industry characteristics						
Industry Competition	−0.2299	−0.2524	−0.3896	−0.4067	−0.2742	−0.2919
	(−0.898)	(−0.989)	(−1.494)	(−1.577)	(−0.970)	(−1.031)
Friendly	−0.0505	−0.0490	−0.0455	−0.0451	−0.1027	−0.1021
	(−0.739)	(−0.716)	(−0.662)	(−0.659)	(−1.401)	(−1.403)
Tender Offer	0.1123***	0.1109***	0.1118***	0.1104***	0.1104**	0.1090**
	(2.927)	(2.863)	(3.096)	(3.030)	(2.433)	(2.392)

Cross-border	0.0728**	0.0724**	0.0725**	0.0727**	0.0674*	0.0674**
	(2.559)	(2.558)	(2.512)	(2.534)	(1.956)	(1.968)
Cash Only	−0.0096	−0.0090	−0.0178	−0.0172	0.0168	0.0174
	(−0.364)	(−0.342)	(−0.677)	(−0.654)	(0.546)	(0.565)
Private Bidder	−0.0192	−0.0222	−0.0209	−0.0237	−0.0245	−0.0273
	(−0.744)	(−0.867)	(−0.818)	(−0.928)	(−0.794)	(−0.887)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.3500**	0.3461**	0.3139**	0.3158**	0.3805**	0.3811**
	(2.424)	(2.378)	(2.180)	(2.177)	(2.347)	(2.326)
Observations	511	511	511	511	511	511
Adjusted *R*-squared	0.050	0.047	0.031	0.031	0.058	0.057

Notes: The table presents relationship between target first bid to completion date returns (CarFBC) and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. First bid to complete date (FBC) returns are estimated using excess returns over DataStream global market index (CarFBC), excess returns over DataStream country market index (CarFBC_C), and excess returns over the two factor (DataStream global and country market indices) market model (CarFBC_E) for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5% and 1% level, respectively.

Table 11. Robustness: Target Announcement Returns, Country Effects, Investor Protection and MLS.

Dependent Variable	(1) Car5	(2) Car5	(3) Car5	(4) Car5	(5) Car5	(6) Car5	(7) Car5
Presence2	−0.0548***	−0.0535***	−0.0568***	−0.0689***	−0.0569***	−0.0569***	−0.0549***
	(−2.821)	(−2.784)	(−2.949)	(−2.950)	(−2.899)	(−2.899)	(−2.797)
Acq InvestorPr					−0.0052		
					(−0.556)		
Tgt InvestorPr					0.0272*		
					(1.715)		
DiffInvertorPr						−0.0052	−0.0149
						(−0.556)	(−1.046)
Presence2 × DiffInvestorPr							0.0193
							(1.176)
Firm characteristics							
Log Assets	−0.0027	−0.0030	−0.0031	−0.0028	−0.0026	−0.0026	−0.0028
	(−0.489)	(−0.550)	(−0.567)	(−0.367)	(−0.461)	(−0.461)	(−0.501)
Tobin's q	−0.0231***	−0.0229***	−0.0231***	−0.0289***	−0.0235***	−0.0235***	−0.0227***
	(−2.894)	(−2.851)	(−2.856)	(−3.050)	(−2.881)	(−2.881)	(−2.811)
ROA	0.0959	0.1046	0.1055	0.0804	0.1012	0.1012	0.0965
	(0.864)	(0.944)	(0.955)	(0.662)	(0.906)	(0.906)	(0.867)
Leverage	−0.0369	−0.0412	−0.0494	−0.0113	−0.0378	−0.0378	−0.0414
	(−0.620)	(−0.697)	(−0.830)	(−0.130)	(−0.628)	(−0.628)	(−0.683)
Deal and industry characteristics							
Industry Competition	−0.1970	−0.1894	−0.1721	−0.2676	−0.1977	−0.1977	−0.2213
	(−1.024)	(−1.006)	(−0.924)	(−1.088)	(−1.026)	(−1.026)	(−1.112)

Friendly	−0.0403	−0.0355	−0.0356	−0.0210	−0.0417	−0.0417	−0.0411
	(−0.815)	(−0.711)	(−0.714)	(−0.332)	(−0.840)	(−0.840)	(−0.820)
Tender Offer	0.1008***	0.0960***	0.1033***	0.1162***	0.1041***	0.1041***	0.1069***
	(3.727)	(3.670)	(4.146)	(2.855)	(3.809)	(3.809)	(3.915)
Cross-border	0.0486**	0.0499**	0.0521**	0.0724**	0.0480**	0.0480**	0.0500**
	(2.114)	(2.153)	(2.230)	(2.262)	(1.986)	(1.986)	(2.061)
Cash Only	0.0111	0.0134	0.0147	−0.0082	0.0095	0.0095	0.0097
	(0.522)	(0.619)	(0.678)	(−0.292)	(0.434)	(0.434)	(0.443)
Private Bidder	−0.0303	−0.0316	−0.0305	−0.0467*	−0.0266	−0.0266	−0.0254
	(−1.410)	(−1.486)	(−1.438)	(−1.740)	(−1.207)	(−1.207)	(−1.149)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	No	Yes	Yes	Yes
Constant	0.2030**	0.2032**	0.1981**	0.1828	0.0239	0.1997**	0.1994**
	(2.024)	(2.021)	(1.987)	(1.371)	(0.138)	(1.992)	(1.995)
Observations	508	506	503	324	511	511	511
Adjusted *R*-squared	0.123	0.125	0.127	0.042	0.116	0.116	0.116

Notes: The table presents robustness tests for target announcement abnormal returns and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. Cumulative abnormal returns (CARs) are estimated using excess returns over DataStream global market index for event day (+2, −2). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.
*, **, and *** refer to significance at 10%, 5% and 1% level, respectively.

Second, bidder's and target's country level investor protection may play a significant role in target's market reaction to M&A announcement, especially, when the governance environment in the bidder's country is different from that of the target. Therefore, in Model 5, we control for the investor protection proxies of the bidder's country and target's country. The investor protection proxy is extracted from http://www.doingbusiness.org/rankings, which ranks countries based on their ability to protect investors. The investor protection index incorporates a country's extent of disclosure index, director liability index, and shareholder suits index. We find that the target's country level investor protection index loads with a positive coefficient that is significant at 10% level. We interpret this result as suggesting that while target's firm-level governance now depends on the acquirer's investor protection, the target's assets are still subject to the jurisdiction of the laws where the target operates. Therefore the legal institutions in the country where the target firm operates continue to matter even after the acquisition of the firm by an acquirer featuring legal institutions of another country. However, the effect of the presence and relative power of MLS continues to be robust to these controls.

Third, in model 6 we control for the difference between investor protection and in model 7 we introduce the interaction of investor protection and *Presence2*, respectively. While we do not observe a significant effect of the country's investor protection environment in *CAR5*, our core findings about the role of MLS remain the same after these controls.

While we control for the bidder's country level of investor protection as discussed above, the investor protection index we use could imperfectly capture the availability and implementation of investor protection in a country. In addition, it could include measurement errors. To mitigate the concern about the quality of the proxy of investor protection of the bidder's country and its eventual effect on our findings, we replicate our tests using the sample of mergers featuring a bidder from the United Kingdom. In untabulated results, we find that *CAR5* loads significantly negatively with *Presence2* and *Vote2/1*. This further confirms that the bidder's country level investor protection does not drive our results, mitigating any concern that the weakness of investor protection proxy may have affected our findings. Accordingly, the results presented in Model 4 of Table 11 that include targets from United Kingdom only further confirm that our main evidence is not driven by the investor protection environment of the target's country, or our selection of sample countries (Table 12).

Table 12. Robustness: Target Returns from Bid to Completion and MLS in Target Ownership.

Dependent Variable	(1) CarFBC	(2) CarFBC	(3) CarFBC_C	(4) CarFBC_C	(5) CarFBC_E	(6) CarFBC_E
Presence2	−0.0618**		−0.0543**		−0.0545*	
	(−2.526)		(−2.259)		(−1.933)	
Vote2/1		−0.0712**		−0.0700**		−0.0686*
		(−2.340)		(−2.249)		(−1.889)
Firm characteristics						
Log Assets	−0.0119	−0.0118	−0.0106	−0.0107	−0.0133	−0.0134
	(−1.473)	(−1.465)	(−1.360)	(−1.383)	(−1.427)	(−1.438)
Tobin's q	−0.0282**	−0.0283**	−0.0239**	−0.0242**	−0.0166	−0.0169
	(−2.308)	(−2.324)	(−2.134)	(−2.175)	(−1.210)	(−1.243)
ROA	0.1563	0.1562	0.1241	0.1276	−0.1467	−0.1439
	(1.079)	(1.068)	(0.869)	(0.887)	(−0.824)	(−0.802)
Leverage	0.0237	0.0240	0.0030	0.0041	−0.0423	−0.0415
	(0.297)	(0.300)	(0.039)	(0.052)	(−0.482)	(−0.472)
Deal and industry characteristics						
Hersfindhal	−0.2237	−0.2463	−0.3892	−0.4063	−0.2788	−0.2966
	(−0.874)	(−0.964)	(−1.484)	(−1.566)	(−0.979)	(−1.041)
Friendly	−0.0513	−0.0498	−0.0455	−0.0451	−0.1022	−0.1015
	(−0.756)	(−0.733)	(−0.662)	(−0.659)	(−1.380)	(−1.382)
Tender Offer	0.1111***	0.1098***	0.1117***	0.1103***	0.1112**	0.1099**
	(2.882)	(2.820)	(3.075)	(3.010)	(2.440)	(2.399)
Cross-border	0.0753***	0.0748***	0.0727**	0.0728**	0.0656*	0.0656*
	(2.655)	(2.653)	(2.563)	(2.584)	(1.934)	(1.944)

Table 12. (*Continued*)

Dependent Variable	(1) CarFBC	(2) CarFBC	(3) CarFBC_C	(4) CarFBC_C	(5) CarFBC_E	(6) CarFBC_E
Cash Only	−0.0081	−0.0075	−0.0177	−0.0171	0.0157	0.0163
	(−0.308)	(−0.286)	(−0.676)	(−0.654)	(0.510)	(0.529)
Private Bidder	−0.0203	−0.0234	−0.0210	−0.0238	−0.0236	−0.0264
	(−0.793)	(−0.916)	(−0.826)	(−0.936)	(−0.765)	(−0.858)
Completion time	−0.0543	−0.0537	−0.0042	−0.0035	0.0407	0.0414
	(−0.620)	(−0.607)	(−0.045)	(−0.037)	(0.343)	(0.347)
Industry effects	Yes	Yes	Yes	Yes	Yes	Yes
Country effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.3396**	0.3357**	0.3131**	0.3151**	0.3883**	0.3891**
	(2.370)	(2.326)	(2.200)	(2.203)	(2.432)	(2.418)
Observations	511	511	511	511	511	511
Adjusted *R*-squared	0.049	0.046	0.029	0.029	0.056	0.056

Notes: The table presents relationship between target first bid to completion date returns (CarFBC) and presence and voting rights of the multiple large shareholders in target's ownership structure. The sample drawn from 19 target's countries represented in Claessens et al. (2000) and Faccio and Lang (2002) includes 511 mergers taken place between 1996 and 2004 which have at least one large shareholder in ownership structure. First bid to complete date (FBC) returns are estimated using excess returns over DataStream global market index (CarFBC), excess returns over DataStream country market index (CarFBC_C), and excess returns over the two factor (DataStream global and country market indices) market model (CarFBC_E). All control variables are defined in the appendix. *T*-statistics based on robust standard errors are presented inside the parenthesis.

*, **, and *** refer to significance at 10%, 5% and 1% level, respectively.

Endogeneity of MLS Structures

The key endogeneity issue in this paper is the possibility of change in ownership structures post-M&A in cases where the payment is made in stock. The acquirer's ownership structure is likely to change according to the target's ownership structure. For example, if the target has significant blockholder(s), these blockholders may remain significant in the acquirer's ownership structure. Similarly, if the target firm has dispersed ownership, this may dilute the ownership of the acquirer's existing blockholders to the point that they may end up being insignificant blockholders. In the stock only mergers, such change in the acquirer's ownership structure may affect the market reaction to targets upon acquisitions. In order to mitigate this concern, we replicate our key results using cash only mergers (179 observations). We find that the coefficient of *Presence2* is negative and significant at 10% level in this subsample, practically ruling out the possibility that our results are an outcome of this endogeneity issue.

In addition, as argued by Demsetz and Lehn (1985), La Porta et al. (1999), and Himmelberg, Hubbard, and Palia (1999), a firm's ownership structure is an outcome of its contracting environment. In that, our research is likely to suffer from an omitted-variable problem. We addressed the omitted-variable problem using country, year and industry fixed effects.[5]

The same arguments of Demsetz and Lehn (1985), La Porta et al. (1999), and Himmelberg et al. (1999) further suggest the possibility of reverse causality between ownership structure and target valuation because individuals and institutions may self select good quality firms thus becoming significant blockholder in the firm. We address this problem using the instrumental variable approach. Since such behavior of large blockholders is unlikely to influence country year average of ownership structure, we instrument MLS variables using the country year averages of their firm-level counterparts. In unreported results using instrumental variable two stage least squares, we find that our results continue to hold. This analysis largely rules out the possibility of endogeneity of ownership structure driving our results Yet, testing this issue more thoroughly would require using dynamic panel tests which the lack of long time series of ownership data prevents us from doing.

CONCLUSION

We use a sample of targets in Mergers and Acquisitions transactions announced between 1996 and 2004 that feature at least one dominant

shareholder, from 19 Western European and East Asian countries. In this sample of completed mergers, we test two hypotheses that relate to the corporate governance role of Multiple Large Shareholder (MLS): on the one hand, if MLS play an active role in corporate governance, being targeted will result in lower abnormal returns and premium. This happens because the market interprets the ownership change resulting from the acquisition as a "loss of good governance." On the other hand, if MLS exacerbate agency problems in the target, announcement returns should be positive, suggesting a positive reaction to the loss of "bad governance."

To test this conjecture, we study the association between the presence and voting power of MLS and target returns, and compare them to single shareholder structures (SLS). We find that targets featuring MLS exhibit significantly lower announcement abnormal returns and lower first-bid-to-merger completion returns compared to those featuring a single dominant shareholder (SLS). These results continue to prevail after we control for several firm, industry, and deal characteristics, the quality of corporate governance of bidders and targets respective countries, industry and year. We interpret these findings as evidence that MLS firms are often more valuable than SLS firms (providing support to the positive view of MLS), which results in a lower merger premium upon takeover. This evidence means there is a positive cost of relinquishing MLS ownership structures, relative to SLS ownership structures. We also find that the governance role of the second largest shareholder in target firms is contingent on its type. The family, as the second largest shareholder exacerbates agency problems, while the widely held firm mitigates them.

We do acknowledge the endogeneity of complex ownership structures, and show that the negative effect of MLS on target returns continues to prevail after addressing such concerns following Laeven and Levine (2009) and Paligorova (2010). We also control for country and industry effects to address some potentially unknown omitted variables. In our tests, we are unable to simultaneously control for firm-level proxies of bidder's corporate governance or targets board structure, nor are we able to test the effects of target's featuring MLS on acquirer's merger abnormal returns. Despite these limitations, our results have some important policy implications, in particular, for firm's restructuring decisions and promoting structures with multiple blockholders in ownership structures. Our results suggest that the firms with failed governance, as embedded in poor ownership structures, are better targets. Also, it is economically

beneficial to promote ownership structures featuring multiple blockholders, especially when the second blockholder is not a family or an individual as this is beneficial to minority shareholders protection.

NOTES

1. For example, Edmans and Manso (2011, p. 2) argue that "*By trading on private information, blockholders move the stock price toward fundamental value, and thus cause it to more closely reflect the effort exerted by the manager to enhance firm value. If the manager shirks or extracts private benefits, blockholders follow the 'Wall Street Rule' of 'voting with their feet' and selling to liquidity traders. This drives down the stock price, reducing the manager's equity compensation and thus punishing him ex post …. Multiple blockholders therefore serve as a commitment device to reward or punish the manager ex post for his actions*."
2. We understand that our ownership dataset covers a period that is relatively old (created in late 1990s). However, apart from Carney and Child (2013), such datasets on international ownership structures prepared with similar details are unavailable. Unfortunately Carney and Child (2013) only cover up to 200 largest firms from the same nine East Asian countries that were covered in Claessens et al. (2000). These countries are Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. We attempted to replicate our analysis using this dataset, unfortunately, we were left with only about three dozen targets even in the initial matching, which we think is not large enough to generate any meaningful results.
3. The Description of Fama-French 12 industries is extracted from Professor Ken French's data library at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
4. We repeat this analysis using raw *CAR5* and raw *CarFBC*, both of which are also lower for MLS targets; however, difference in *CAR5* is not significant at 5% level, while difference in *CarFBC* is significant at 5% level, suggesting that country effect is non-trivial.
5. It is not possible to use firm fixed effects in our tests due to the lack of variation in ownership variables in our dataset.

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APPENDIX: VARIABLE DEFINITIONS

Variable	Definition	Source
CAR5	The cumulative excess returns over the returns on DataStream Global Market Index for the 5-day event window (−2, +2).	Authors' estimation
CAR5_C	The cumulative excess returns over the returns on DataStream Country Market Index for the 5-day event window (−2, +2).	Authors' estimation
CAR5_E	The cumulative excess returns over the returns over two factor model returns, for the 5-day event window (−2, +2). The two factors are returns on DataStream Global Market Index and DataStream Country Market Index, where model parameters are estimated over the 200-day estimation period (−220, −21).	Authors' estimation
CarFBC	The cumulative excess returns over the returns on DataStream Global Market Index from the two days before the first announcement day to merger completion day.	Authors' estimation
CarFBC_C	The cumulative excess returns over the returns on DataStream Country Market Index from the two days before the first announcement day to merger completion day.	Authors' estimation
CarFBC_E	The cumulative excess returns over the returns over two factor model returns for the window including two days before the first announcement day to merger completion day. The two factors are returns on DataStream Global Market Index and DataStream Country Market Index, where model parameters are estimated over the 200-day estimation period (−220, −21).	Authors' estimation
Ownership structure variables		
Presence2	Dummy variable: 1 for firms with at least two large shareholders each with at least 10% voting rights, 0 otherwise.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation

(*Continued*)

Variable	Definition	Source
Presence2345	Number of large shareholders that have at least 10% voting rights, beyond the largest shareholder.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation
Vote2	Size of voting rights of the second largest shareholder measured as the percentage of total votes outstanding.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation
Vote2345	Sum of the size of voting rights of all large shareholders other than the largest one: Vote2 + Vote3 + Vote4 + Vote5.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation
Vote2/1 Ratio	The voting rights of the second largest shareholder relative to that of the dominant one: Vote2/Vote1.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation
Vote2345/1 Ratio	The sum of voting rights of all large shareholders other than the largest one relative to that of the dominant shareholder: (Vote2 + Vote3 + Vote4 + Vote5)/Vote1.	Claessens et al. (2000), Faccio and Lang (2002), authors' estimation
Target characteristics		
Log Assets	Log of book value of total assets	WorldScope
Tobin's q	Market value of assets (total assets − total book value of equity + market value of equity) divided by book value of assets:	WorldScope
Leverage	Book value of debts over total assets	WorldScope
ROA	Operating income before depreciation − interest expenses − income taxes, divided by book value of total assets.	WorldScope
Deal and industry characteristics		
Industry Competition	Hersfindhal index based on the sum of the square of the market share (sales/total industry sales) of the firm in Fame French 48 industries by year of all U.S. firms.	Compustat/Authors' estimation
Friendly	Dummy variable: 1 for friendly deal, 0 otherwise	SDC Platinum/Authors' estimation
Tender Offer	Dummy variable: 1 for tender offer, 0 otherwise	SDC Platinum/Authors' estimation
All Cash Deal	Dummy variable: 1 for purely cash deals, 0 otherwise.	SDC Platinum/Authors' estimation
Cross-border	Dummy variable: 1 if target and acquirer are from different countries, 0 otherwise.	SDC Platinum, Authors' estimation

(*Continued*)

Variable	Definition	Source
Private Target	Dummy variable: 1 for private target, 0 otherwise.	SDC Platinum/Authors' estimation
Investor protection variables		
InvestorPr	Strength of investor protection index: extent of disclosure index, extent of director liability index and ease of shareholder suits index	Doing business
DiffInvestorPr	Acquirer's InvestorPr less Target's InvestorPr	Authors' estimation

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A GENDER GAP IN EXECUTIVE CASH COMPENSATION IN THAILAND: A VIEW OF THE EXPECTANCY THEORY

Kannikar Namwong, Tatre Jantarakolica, Thanomsak Suwannoi and Jutamas Wongkantarakorn

ABSTRACT

This study investigates the relation of executive cash compensation and gender characteristics of senior executives of Thai listed companies using 1,660 firm-years observations from 2009 to 2013. The findings show that male executives earn more cash compensation than do their female counterparts and that compensation is higher for male CEOs whose educational qualifications were Master's degree or above. Companies with a higher proportion of male executives and with better firm performance (measured by ROA, ROE, and Tobin's q*) pay higher cash compensation. The results conform with the Expectancy theory that male executives receive more compensation than do female executives because of their (expected) abilities to make higher returns to the firm's assets. Other*

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significant determinants are that older and larger firms pay more cash compensation to the executives (Life cycle theory) and that companies with a higher proportion of independent directors (Agency Theory) and higher ownership concentrations (Stewardship theory) offer less compensation.

Keywords: Gender gap; executive compensation; expectancy theory; Thailand

JEL classification: G3

INTRODUCTION

Having a compensation package that links to the firm performance is a strong means to motivate the company's executives to put in more effort and improve performance (Vroom, 1964). The essence is that the compensation must be wanted by the executives. One aspect of the executive compensation literature conjectures that differences in a gender and education lead to a different expectation on the rewards for the executives. In a recent work, for instance, Cheng Wang et al. (2013) study 2,448 executives from 1,622 companies in China and conclude that male executives are better paid because they have a better decision-making. Assuming that a company relates the compensation directly to the performance and ensures that it is wanted by its executives as in the Expectancy theory of motivation, this paper examines whether differences in the executives' gender and education lead to executive pay discrimination.

Other determinants of the executive compensation are also included in the analysis. For example, Conyon and He (2011) use the representation theory to explain a negative relationship between independent directors and executive compensation from a sample of Chinese listed companies, the results that are consistent with Fama and Jensen (1983). Also, Kaplan and Minton (1994) and Jiang, Habib, and Smallman (2009) find that executive compensation is positively correlated with firm performance. We include the relevant variables and discuss their corresponding theories in determining the executive compensation in the section "Literature Review."

Our findings show that an executive gender has a statistical relationship with the executive pay. Companies with a higher proportion of male executives offer more compensation to their executives, as predicted by the Expectancy theory. Also, executive compensation is higher for companies

with a male CEO. However, we find no relationship between the executive compensation and the level of executives' education.

Other important determinants are worth noting. In an agency framework, a proportion of independent directors on board has a negative impact on the executive compensation. However, the CEO who is also the Chairman of the board (Duality) does not have any agency influence on the level of his compensation. An ownership concentration (a proxy for the Stewardship theory) has statistical negative relationship with the executive compensation. Firm performance (ROA, ROE, and Tobin's *q*) has a positive relationship with executive compensation as suggested by the Motivation theory. Firm characteristics (size and age) also have a positive relationship with the executive pay as suggested by the Life cycle theory.

Another contribution of this paper is an analysis of the interaction of the gender variables and other variables determining the executive compensation. First, as firm performance increases, companies with a higher proportion of male executives and with a male CEO offer higher executive compensation. Second, bigger firms and older firms offer higher executive compensation when they have a male CEO and good firm performance. The results would be otherwise if the CEO were female. Third, companies having a male CEO and a higher proportion of executives with a Master's degree offer higher executive compensation. Fourth, companies with a higher proportion of male executives and a higher proportion of independent directors offer less executive compensation. Lastly, companies with a higher ownership concentration and a higher proportion of male executives provide higher executive pays. In sum, a gender gap in executive compensation exists in Thailand.

The paper is organized as follows. The section "Literature Review" discusses the relevant theories and variables and proposes the research hypotheses. The section "Data and Methodology" presents the data and base regression models. Empirical results are discussed in the section "Results." The section "Conclusion" summarizes the findings and concludes the paper.

LITERATURE REVIEW

Expectancy Theory

In a setting of the Expectancy theory, executives expect to be satisfactorily remunerated from the tasks they have worked for (Vroom, 1964). The theory's basis is a motivation. One is optimally motivated when his cognitive

process and thoughts are well recognized. Thus, to motivate the executives to work harder and more efficient, their expectation of rewards must be comprehended. Recent research in this area (Bell, 2005; Cheung et al., 2013; Lam, McGuinness, & Vieito, 2013; Wang, Venezia, & Lou, 2013; Xiao, He, Lin, & Elkins, 2013) posits that male executives expect different pays from their female counterparts. Male executives perceive that they have good management skills that enable them to fix the problems better than the females and as such should be better compensated.

Following the previous studies, we calculate a proportion of male and female executives (Men and Women in Table 1) to be used as a proxy for the executive gender in the Expectancy theory.[1] We also have a dummy CEO gender for which it is equal to 1 if the No. 1 management is male. Bell (2005), Khan and Vieito (2013), Cheng Wang et al. (2013), and Lam et al. (2013), among others, find that female executives are less compensated than male executives as predicted by the Expectancy theory.

The Expectancy theory also suggests that executives with higher education will expect to be paid differently from those with lower level of education. Since this perception coordinates higher education with more talent, the executives must be paid differently to be motivated. We calculate a proportion of executives with an undergraduate degree or lower (Bachelor) and with a Master's degree or higher (Master) to be a proxy for educational background for the executives. We hypothesize a positive relationship between a higher level of education (Master) and executive compensation.[2]

Agency Theory

The asymmetry of information between the executives (agent) and shareholders (principal) may trigger a conflict of interests (Jensen & Meckling, 1976). To minimize the agency cost, an effective governance mechanism must be in place. This study uses two variables to incorporate the agency issues into the determinant of executive compensation. First, Anderson, Melanson, and Maly (2007) and Veprauskaite and Adams (2013) suggest that when the CEO is also the Chairman of the board (CEO duality) the executive compensation policy is under the influence of the CEO himself.[3] As such Murphy (1999, chapter 38), Bertrand and Mullainathan (2001), Dalton, Daily, Certo, and Roengpitya (2003), and Conyon and He (2011) suggest that a proportion of independent directors (Independent) can be used as a proxy for monitoring function to oversee the compensation policy for executives.[4] To incorporate the Agency issues in determining the executive

Table 1. Summary of Variables, Description, and Expected Signs.

Variables	Abbreviation	Description	Expected Signs
Executive compensation	(Y_{it})	Natural logarithm of executive cash compensation including annual salary and bonus.	
Executive gender	Men/Women (x_{11it})	A proportion of male (female) executives.	+/(−)
CEO gender	CEO gender (x_{12it})	CEO gender = 1 if the CEO is male and 0 otherwise.	+
Education	Bachelors/ Masters (x_{13it})	A proportion of executives with undergrad degrees or lower (Master's degree or higher).	−/(+)
CEO duality	Duality (x_{21it})	Duality = 1 if the CEO is also the Chairman of the board and 0 otherwise.	+
Independent directors	Independent (x_{22it})	A ratio of the number of independent directors to the number of all directors on board.	−
Family ownership	Family5/ Family20 (x_{23it})	Family5 (Family20) = 1 if the shareholding of the family members is 5 (20) percent or more.	−
Ownership concentration	Owner (x_{24it})	A proportion of Top 5 shareholdings.	−
ROA	ROA (x_{31it})	Net profit divided by total assets at the end of the year.	+
ROE	ROE (x_{32it})	Net profit divided by total shareholders' equity at the end of the year.	+
Tobin's q	Tobin's q (x_{33it})	Market value of equity plus book value of liabilities divided by book value of total assets.	+
Firm size	SIZE (x_{41it})	Natural logarithm of total assets at year end.	+
Firm age	AGE (x_{42it})	Number of years listed on the Stock Exchange of Thailand.	+
Industry	IND (x_{43it})	Industry classification according to the Stock Exchange of Thailand.	+

Notes: This table reports the data variables description, the data are listed companies in the Stock Exchange of Thailand (SET) during 2009−2013. Sources are from the annual reports, Form 56-1, Securities and Exchange Commission, and SETSMART. The expected signs of independent variables follow the literatures.

compensation, we hypothesize a positive relationship for the CEO duality and a negative relationship for the proxy of monitoring effectiveness (Independent).

Stewardship Theory

Davis, Schoorman, and Donaldson (1997) suggest that the reward is not enough to motivate executives to minimize the conflict of interest. The theory poises that executive has the responsibility to manage firm performance effectively. Its mission is to create a positive attitude toward the organization over private interests for the benefit of shareholders. In this setting, shareholders trust the executives to safeguard their interests.

From the previous studies, Conyon and He (2011) find that executive compensation is negatively correlated with the majority stake held. Gallego and Larrain (2012) find a negative relationship between executive compensation and family members as shareholders. Amoako-Adu, Baulkaran, and Smith (2011) demonstrate that executive compensation is controlled by the concentration of shareholders for which the executives are also members of the family shareholders. Cheung, Stouraitis, and Wong (2005) also study the impact of the major shareholders and family members on executive remuneration in Hong Kong. They find that major shareholders and family members holding not more than 35 percent (ownership concentration) have a negative effect on the executive compensation.

We obtain a percentage of Top 5 shareholdings at the end of the calendar year from SETSMART and use it as a proxy for ownership concentration (Owner). We classify a family shareholding by using a dummy variable for which Family5 = 1 if the shareholding of the family members is 5 percent or more and 0 otherwise and Family20 = 1 if the shareholding of the family members is 20 percent or more and 0 otherwise. We hypothesize that the Stewardship variables will have a negative impact on the executive compensation.

Motivation Theory

In a Motivation theory, executives receive compensation depending on the firm performance.[5] Jiang et al. (2009), Lunenburg (2011), and Veprauskaite and Adams (2013) find a positive relationship between executive compensation and firm performance measured by ROA, ROE, and Tobin's q. In this study, we also use ROA, ROE, and Tobin's q alternately to measure firm

performance and hypothesize a positive relationship with executive cash compensation for Thai listed companies.

Life Cycle Theory

The life cycle of a business can be divided into five phases: start-up, growth, mature, saturation, and declining.[6] In this study, we use the firm size and firm age to control for the impact of the business life cycle on executive compensation. As a business expands, firms invest more in assets and the management bears more responsibilities. The executive pay should be a direct relationship to the firm SIZE measured by the book value of total assets. Relative to a start-up firm, a well-established firm should be able to offer more compensation to the management. We measure firm AGE as the number of years listed on the Stock Exchange of Thailand and hypothesize a positive relationship with executive cash compensation. Lastly, due to different industry characteristics and their possible effect on the executive compensation, we use an industry dummy in all regression equations.[7]

DATA AND METHODOLOGY

The data are listed companies in the Stock Exchange of Thailand (SET) during 2009–2013. Sources are from the annual reports, Form 56-1, Securities and Exchange Commission, and SETSMART. Executive cash compensation (Y_{it}) includes salaries and cash bonuses. A random-effect panel model is specified as follows:

$$Y_{it} = \beta X_{it} + \mu_{it} + \varepsilon_{it} \tag{1}$$

Y_{it} = Executive compensation of company i at time t
X = Matrix of explanatory variables – (X_1, X_2, X_3, X_4)
X_1 = Matrix of explanatory variables – concerning on characteristic of executive
x_{11} = Men or Women
x_{12} = CEO gender
x_{13} = Education

X_2 = Matrix of explanatory variables – concerning on ownership structure – $[x_{2.11it}, x_{2.12it}, x_{2.21it}, x_{2.22it}]$
$x_{2.11}$ = CEO duality
$x_{2.12}$ = Independent directors
$x_{2.21}$ = Family ownership
$x_{2.22}$ = Ownership concentration
X_3 = Matrix of explanatory variables – concerning on firm performance – $[x_{31it}, x_{32it}, x_{33it}]$
x_{31} = Firm performance: ROA
x_{32} = Firm performance: ROE
x_{33} = Firm performance: Tobin's q
X_4 = Matrix of control variables – $[x_{41it}, x_{42it}, x_{43it}]$
x_{41} = Firm size
x_{42} = Firm age
x_{43} = Firm industry
i = Company dimension ($i = 1, \ldots, N$)
t = Time dimension ($t = 1, \ldots, T$)
β = Vector of the coefficients of the variables
μ_i = Cross-sectional Random effects
ε_{it} = Error term of the company t at time t

RESULTS

We first examine the determinants of executive cash compensation (salary and bonuses) of the top executive in Thai listed companies. An executive gender (Men and Women) has a statistical relationship with the executive pay (Table 2). Companies with a higher proportion of male executives offer more compensation to their executives, as predicted by the Expectancy theory and consistent with Bell (2005), Cheng Wang et al. (2013), Lam et al. (2013), and Khan and Vieito (2013). A male CEO (CEO gender) is paid more than his female counterpart in Thailand. Bugeja, Matolcsy, and Spiropoulos (2012) suggest that men have a better and more effective judgment than women. However, we find no relationship between the executive compensation and the level of executives' education (Bachelor and Master) as in Jalbert, Furumo, and Jalbert (2011). The results are robust in all models.

Table 2. Base Models.

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Men	0.0025***	0.0025***	0.0024***			
Women				−0.0029***	−0.0026***	−0.0032***
CEO gender	0.1500**	0.1490**	0.1490**	0.1490**	0.1460**	0.1440**
Bachelors	0.0006		0.0006		0.0007	
Masters		−0.0006		−0.0005		−0.0006
Duality	0.0528	0.0528	0.0491	0.0508	0.0525	0.0544
Independent	−0.0032*	−0.0032*	−0.0032*	−0.0033*	−0.0033*	−0.0034*
Family5	−0.0291	−0.0296			−0.0288	
Family20			−0.0790	−0.0890		−0.1090
Owner	−0.0024*	−0.0024*	−0.0023*	−0.0023*	−0.0028**	−0.0028**
ROA	0.0030***	0.0030***				
ROE			0.0008**	0.0008**		
Tobin's *q*					0.0277***	0.0292***
Size	0.173***	0.1730***	0.1740***	0.1740***	0.1900***	0.1910***
Age	0.0132***	0.0132***	0.0131***	0.0131***	0.0119***	0.0118***
Industry	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.
Constant	12.75***	12.82***	12.76***	13.07***	12.46***	12.77***
Observations	1660	1660	1660	1660	1660	1660
Group Obs	348	348	348	348	348	348

Table 2. (*Continued*)

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Chi^2	202.6***	202.4***	200.5***	203.4***	206.9***	210.7***
Overall R^2	0.289	0.289	0.287	0.287	0.291	0.290

Notes: This table reports regression results of executives' compensation on various characteristics. Executives' compensation is a natural logarithm of executive cash compensation including annual salary and bonus. Men/Women is a proportion of male (female) executives. CEO gender is a dummy variable, CEO gender = 1 if the CEO is male and 0 otherwise. Education is a proportion of executives with undergrad degrees or lower (Master's degree or higher). Duality is a dummy variable, Duality = 1 if the CEO is also the Chairman of the board and 0 otherwise. Independent is a ratio of the number of independent directors to the number of all directors on board. Family ownership is a dummy variable, Family5 (Family20) = 1 if the shareholding of the family members is 5 (20) percent or more. Ownership concentration is a proportion of Top 5 shareholdings. ROA is a net profit divided by total assets at the end of the year. ROE is a net profit divided by total shareholders' equity at the end of the year. Tobin's q is a market value of equity plus book value of liabilities divided by book value of total assets. Firm size is a natural logarithm of total assets at year end. Firm age is a number of years listed on the Stock Exchange of Thailand. Industry is an industry classification according to the Stock Exchange of Thailand.
***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

The monitoring role of independent directors (Independent) suggested by Mehran (1995) has an impact on the executive compensation. It helps lower the executive pay to minimize the executive gain at the expense of the shareholders (Conyon & He, 2011; Dalton et al., 2003; Mehran, 1995). However, the CEO who is also the Chairman of the board (Duality) does not have any agency influence on the level of his compensation, consistent with Anderson et al. (2007) and Veprauskaite and Adams (2013).

The family ownership (Family5 and Family20) has no statistical relation with the executive compensation. This result is contradict to the traditional wisdom that members of the family who are also the shareholders help overseeing the company's administration and should result in lower compensation paid to the executives (Stewardship theory).[8] The Stewardship theory is in play when we use an ownership concentration (Owner) as a proxy to control personal benefits of the executives. A statistically negative relationship found in this study is consistent with Amoako-Adu et al. (2011) and Gallego and Larrain (2012).

Firm performance measured by ROA, ROE, and Tobin's q has a positive relationship with executive compensation. Our results support the Motivation theory by Herzberg (2003) and are consistent with Jiang et al. (2009), Mehran (1995), Wu (2013), Veprauskaite and Adams (2013).

Firm characteristics measured by size of total assets (Size) and age of the company (Age) have a positive relationship with the executive pay as suggested by the Life cycle theory of Downs (1967) and Greiner (1972). Our results are consistent with Khan and Vieito (2013). We find no relation of the executive compensation to the firm's industry.

A Gender Gap and the Expectancy Theory

To examine the significant role of gender in the Expectancy theory, this section extends the base regression models to include the interactive terms between gender and firm performance. An extended regression model is specified as follows:

$$Y_{it} = \beta X_{it} + \mu_{it} + \varepsilon_{it} \tag{2}$$

Y_{it} = Executive compensation of company i at time t

X = Matrix of explanatory variables $-$ $(X_1, X_2, X_3, X_4, X_{51})$

X_1, X_2, X_3, and X_4 are defined as in the base model.
X_{51} = Matrix of explanatory variables – concerning on interaction effect – $[x_{511it}, x_{512it}]$
x_{511} = CEO gender × Firm performance
x_{512} = Men × Firm performance

Table 3 reports only the coefficients of the added gender and firm performance variables. The signs and significance of the coefficients in the base models remain intact. As firm performance (measured by ROA and ROE) increases, companies with a male CEO offer higher executive compensation. Also, for companies with a higher proportion of male executives, the executive compensation is higher as the firm performance is better. The results are in harmony with the motivation in the Expectancy theory and support the findings in Valenti, Luce, and Mayfield (2011) and Jiang et al. (2009). The relationship is not found when the firm performance is measured by Tobin's q. However, when the interaction terms with firm age are added, the results are the same as those of other firm performance measures (Table 4).

CEO Gender and Firm Characteristics

Having established that the Expectancy theory is in effect for executives in Thai listed companies, we further examine how the firm characteristics such as size and age take the part in determining the executive compensation. We revise the regression models as follow.

$$Y_{it} = \beta X_{it} + \mu_{it} + \varepsilon_{it} \tag{3}$$

Y_{it} = Executive compensation of company i at time t
X = Matrix of explanatory variables – $(X_1, X_2, X_3, X_4, X_{52})$
X_1, X_2, X_3, and X_4 are defined as in the base model.
X_{52} = Matrix of explanatory variables – concerning on interaction effect – $[x_{521it}, x_{522it}]$
x_{521} = CEO gender × Firm performance × Firm size
x_{522} = CEO gender × Firm performance × Firm age

Taken the Expectancy theory as given, our results show support for the Life Cycle theory as well. Bigger firms and older firms offer higher executive compensation when they have a male CEO and good firm performance. The results would be otherwise if the CEO were female. Be it

Table 3. A Gender gap and the Expectancy Theory.

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
CEO gender × ROA	0.00821***					
CEO gender × ROE		0.00383***				
CEO gender × Tobin's *q*			0.00338			
Men × ROA				0.0000916***		
Men × ROE					0.0000393***	
Men × Tobin's *q*						0.0000607
Constant	10.45***	10.51***	10.44***	10.39***	10.47***	10.51***
Observations	1,660	1,660	1,660	1,660	1,660	1,660
F	46.59	46.69	46.78	46.32	46.16	46.65
R^2	0.338	0.339	0.339	0.337	0.336	0.339

Notes: This table reports regression results of executives' compensation on interaction effects. Executives' compensation is a natural logarithm of executive cash compensation including annual salary and bonus. CEO gender × ROA is an interaction term between a dummy variable CEO gender and net profit divided by total assets at the end of the year. CEO gender × ROE is an interaction term between a dummy variable CEO gender and net profit divided by total shareholders' equity at the end of the year. CEO gender × Tobin's *q* is an interaction term between a dummy variable CEO gender and market value of equity plus book value of liabilities divided by book value of total assets. Men × ROA is an interaction term between a proportion of male executives and net profit divided by total assets at the end of the year. Men × ROE is an interaction term between a proportion of male executives and net profit divided by total shareholders' equity at the end of the year. Men × Tobin's *q* is an interaction term between a proportion of male executives and market value of equity plus book value of liabilities divided by book value of total assets.

*** denote significance at the 1% levels.

Table 4. Gender and Firm Characteristics.

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
CEO gender × ROA × Size	0.000318**					
CEO gender × ROE × Size		0.000177***				
CEO gender × Tobin's q × Size			0.00240			
CEO gender × ROA × Age				0.000366***		
CEO gender × ROE × Age					0.000177***	
CEO gender × Tobin's q × Age						0.00140*
Constant	10.46***	10.55***	10.67***	10.49***	10.53***	10.59***
Observations	1,660	1,660	1,660	1,660	1,660	1,660
F	40.57	46.70	40.36	46.05	46.03	46.91
R^2	0.342	0.339	0.341	0.336	0.336	0.340

Notes: This table reports regression results of executives' compensation on interaction effects. Executives' compensation is a natural logarithm of executive cash compensation including annual salary and bonus. CEO gender × ROA × Size is an interaction term among a dummy variable CEO gender, net profit divided by total assets at the end of the year, and natural logarithm of total assets at year end. CEO gender × ROE × Size is an interaction term among a dummy variable CEO gender, net profit divided by total shareholders' equity at the end of the year, and natural logarithm of total assets at year end. CEO gender × Tobin's q × Size is an interaction term among a dummy variable CEO gender, market value of equity plus book value of liabilities divided by book value of total assets, and natural logarithm of total assets at year end. CEO gender × ROA × Age is an interaction term among a dummy variable CEO gender, net profit divided by total assets at the end of the year, and number of years listed on the Stock Exchange of Thailand. CEO gender × ROE × Age is an interaction term among a dummy variable CEO gender, net profit divided by total shareholders' equity at the end of the year, and number of years listed on the Stock Exchange of Thailand. CEO gender × Tobin's q × Age is an interaction term among a dummy variable CEO gender, market value of equity plus book value of liabilities divided by book value of total assets, and number of years listed on the Stock Exchange of Thailand.

***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

whether small or big firms, new or older firms, a gender gap in executive compensation exists.[9] Our results are consistent with Khan and Vieito (2013), and Nourayi, Kalbers, and Daroca (2012).

The Role of Monitoring and Stewardship in the Expectancy Theory

In the previous analysis, we find that educational background has no significant relationship with the executive compensation. In this section, we tie the education variables to the gender variables and examine how they interact to determine the executive compensation. We also examine the interaction of the gender variables and the CEO duality, role of independent directors, and ownership concentration in determining the executive compensation of Thai listed companies. As such, the regression models are revised as follow.

$$Y_{it} = \beta X_{it} + \mu_{it} + \varepsilon_{it} \tag{4}$$

Y_{it} = Executive compensation of company i at time t
X = Matrix of explanatory variables − $(X_1, X_2, X_3, X_4, X_{53})$
X_1, X_2, X_3, and X_4 are defined as in the base model.
X_{53} = Matrix of explanatory variables − concerning on interaction effect − $[x_{531it}, x_{532it}, x_{533it}, x_{534it}, x_{535it}, x_{536it}, x_{537it}]$
x_{531} = CEO gender × Education
x_{532} = Men × Education
x_{533} = CEO gender × CEO duality
x_{534} = CEO gender × Independent directors
x_{535} = CEO gender × Ownership concentration
x_{536} = Men × Independent directors
x_{537} = Men × Ownership concentration

The results in Table 5 show that companies having a male CEO and a higher proportion of executives with a Master's degree offer higher executive compensation. This is consistent with the traditional wisdom that higher education leads to higher pay (Adams et al., 2007). However, companies with a higher proportion of male executives and a higher proportion of executives with a Bachelor degree or lower pay higher compensation than when they have a majority of male executives with a Master's degree. The findings are at odd. Perhaps, the pay discrimination due to a gender

Table 5. The Role of Monitoring and Stewardship in the Expectancy Theory.

Variables	Model (1)	Model (2)	Model (3)	Model (4)
Men × Bachelor	0.0000769**	0.0000793***		
Men × Master			−0.000072**	
CEO gender × Bachelor	−0.0061***			
CEO gender × Master		0.0069***	0.0075***	
CEO gender × Duality	0.0557	0.0528	0.0460	
CEO gender × Independent				−0.0024
CEO gender × Ownership				−0.0085**
Men × Independent				−0.000182**
Men × Ownership				0.000172***
Constant	10.07***	10.03***	10.69***	9.819***
Observations	1,660	1,660	1,660	1,660
F	42.90	43.17	43.10	39.80
R^2	0.344	0.345	0.345	0.329

Notes: This table reports regression results of executives' compensation on interaction effects. Executives' compensation is a natural logarithm of executive cash compensation including annual salary and bonus. Men × Bachelor is an interaction term between a proportion of male executives and a proportion of executives with undergrad degrees or lower. Men × Master is an interaction term between a proportion of male executives and a proportion of executives with master's degree or higher. CEO gender × Bachelor is an interaction term between a dummy variable CEO gender and a proportion of executives with undergrad degrees or lower. CEO gender × Master an interaction term between a dummy variable CEO gender and a proportion of executives with master's degree or higher. CEO gender × Duality an interaction term between a dummy variable CEO gender and a dummy variable, Duality = 1 if the CEO is also the Chairman of the board and 0 otherwise. CEO gender × Independent an interaction term between a dummy variable CEO gender and a ratio of the number of independent directors to the number of all directors on board. CEO gender × Ownership is an interaction term between a dummy variable CEO gender and a proportion of Top 5 shareholdings. Men × Independent is an interaction term between a proportion of male executives and a ratio of the number of independent directors to the number of all directors on board. Men × Ownership is an interaction term between a proportion of male executives and a proportion of Top 5 shareholdings.

***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

difference dominates, causing the educational background to be indifferent as in Jalbert et al. (2011) and Gallego and Larrain (2012).

The CEO gender and CEO duality have no impact on the executive compensation. The CEO does not use his influence as the Chairman of the board to intervene with the executive compensation as in Valenti et al. (2011) and Cao, Pan, and Tian (2011).

For the monitoring role of independent directors, the results show that companies with a higher proportion of male executives and a higher proportion of independent directors offer less executive compensation. The independent directors are an effective governance mechanism to help minimizing the agency costs to the shareholders as in Khan and Vieito (2013) and Conyon and He (2011). The coefficient is insignificant for the CEO gender, however.

The results for the ownership concentration as a proxy for the Stewardship theory are mixed. Companies with a higher ownership concentration and a higher proportion of male executives (CEO and the next 4 levels of top management) provide higher executive pays, consistent with Cheung et al. (2013). An executive gender makes a difference in executive compensation in Thailand even when the ownership is highly concentrated. However, companies with a high ownership concentration and a male CEO offer less executive compensation. Perhaps, in a company with a high ownership concentration, the controlling shareholder or its family members are not only on the board of directors but also take a management position such as the CEO. They have an incentive to minimize the agency costs to the shareholders and executive compensation is one of the mechanics.

CONCLUSION

An executive gender has a statistical relationship with the executive pay. Companies with a high proportion of male executives and with a male CEO offer more compensation to their executives (Expectancy theory). For the agency theory, a proportion of independent directors has a negative impact on the executive compensation while CEO duality does not. A proxy for the Stewardship theory (ownership concentration) has a negative relationship whereas firm performance (Motivation theory) and firm characteristics (Life cycle theory) has a positive relationship with executive compensation.

An analysis of the interaction effects between the gender variables and other variables determining the executive compensation confirms the findings that a gender gap in executive compensation exists in Thailand.

For example, a company with a higher proportion of male executives and with a male CEO offer higher executive compensation as firm performance gets better. An interaction with the firm characteristics suggests that bigger firms and older firms offer higher executive compensation when they have a male CEO and good firm performance. An interaction with education also matters. Companies having a male CEO and a higher proportion of executives with a Master's degree offer higher executive compensation. On the other hand, an interaction of a proportion of male executives and a proportion of independent directors negatively impact the executive compensation.

We conclude the paper that there is pay discrimination for executives in Thai listed companies. What have female executives done to deserve less pay? Or, it is an artifact that women are minority in the top management and as such a statistical relationship with the executive cash compensation is always negative. If so, corporation should hire more female executives rather than focusing on increasing the compensation per se. For example, Lam et al. (2013) suggest that female CEO is more likely in firms with a presence of at least one female director. This topic is important for the policymakers and corporations alike to encourage equal job opportunity and equal pay in the economy, a subject needed for further examination.

NOTES

1. The definition of top executives is based on that provided by the Securities and Exchange Commission, Thailand. We include the No. 1 executive (CEO) and the next 4 management positions as executives in our study.
2. While Crumley (2008) finds a positive relationship between executive education and compensation, Jalbert, Furumo, and Jalbert (2011) find no such relationship. Jalbert et al. (2011) explain that the Expectancy theory is part of the Motivation theory. The reward in and of itself is a motivation for executives to get the job done regardless of the educational background.
3. However, Anderson et al. (2007) and Veprauskaite and Adams (2013) find no relationship between the CEO duality and executive compensation.
4. The results are mixed, however. Bertrand and Mullainathan (2001) and Dalton et al. (2003) find a positive relation while Conyon and He (2011) show that independent directors help lower the executive compensation.
5. The motivation factors are discussed in Herzberg (1968).
6. See Downs (1967) and Greiner (1972).
7. See Baird and Meshoulam (1988), Jiang et al. (2009), Nourayi, Kalbers, and Daroca (2012), and Khan and Vieito (2013).
8. Conyon and He (2011) and Amoako-Adu et al. (2011) find a statistically negative relationship.

9. We also run a robustness check by replacing the CEO gender with the proportion of male executives (CEO and the next 4 levels of top management). The results are similar with statistically positive coefficient on the interactive terms – Men × Firm performance × Firm characteristics. The results are available upon request.

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CEO COMPENSATION PRACTICES AROUND SPINOFFS

John S. Howe and Scott O'Brien

ABSTRACT

We examine the use of relative performance evaluation (RPE), asymmetry in pay for skill/luck, and compensation benchmarking for a sample of firms involved in a spinoff. The spinoff affects firm characteristics that influence the use of the identified compensation practices. We test for differences in the compensation practices for the pre- and post-spinoff firms. We find that RPE is used for post-spinoff CEOs, but not pre-spinoff CEOs. Post-spinoff CEOs are also paid asymmetrically for luck where they are rewarded for good luck but not punished for bad luck. Both pre- and post-spinoff CEOs receive similar levels of compensation benchmarking. The study provides additional evidence on factors that influence compensation practices. Our spinoff sample allows us to examine how compensation practices are affected by changes in firm characteristics while keeping other determinants of compensation constant (i.e., the board and, in many cases, the CEO). Our findings contribute to the understanding of how the identified compensation practices are used.

Keywords: CEO compensation; relative performance evaluation; pay for luck; benchmarking; spinoffs

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INTRODUCTION

A corporate spinoff occurs when a parent firm separates a business division by distributing shares of the division to its shareholders on a pro-rata basis. After the distribution, the parent firm and the firm created by the spinoff operate as separate companies and trade separately. We will refer to the pre-spinoff and continuing firm as the "parent," and the firm created by the spinoff as the "subsidiary," even though the parent no longer has a controlling interest in the subsidiary after the spinoff.

A recent example of a spinoff occurred on June 30, 2011, when Marathon Oil Corporation spun off its downstream (refining) division, which was renamed Marathon Petroleum Corporation. The CEO of Marathon Oil, Clarence Cazalot, Jr., remained as CEO of Marathon Oil after the spinoff. Gary Heminger, former executive vice president of the downstream division at Marathon Oil, was appointed CEO of Marathon Petroleum Corporation.

Unlike other forms of divestitures, spinoffs involve no cash exchanges and thus are not motivated by a company's cash requirements. Spinoffs are received well by the market, with an average abnormal return of 3% around the announcement date (Desai & Jain, 1999; Hite & Owers, 1983; Krishnaswami & Subramaniam, 1999; Miles & Rosenfeld, 1983; Schipper & Smith, 1983). The long-term performance of firms involved in spinoffs is less definitive. Cusatis, Miles, and Woolridge (1993) find evidence of one to three year positive and significant buy-and-hold abnormal returns for both the parent and subsidiary firms following a spinoff. McConnell, Ozbilgin, and Wahal (2001) find that the significance of long-term excess returns for parent and subsidiary firms is sensitive to the empirical methods used and outliers in the data.

A number of theories have been put forth to explain the gains associated with spinoffs, including improved focus and the elimination of negative synergies (Daley, Mehrotra, & Sivakumar, 1997; Desai & Jain, 1999; Hite & Owers, 1983; Schipper & Smith, 1983), improved investment allocation (Ahn & Denis, 2004; Gertner, Powers, & Scharfstein, 2002), transfer of wealth from bondholders to shareholders (Maxwell & Rao, 2003; Parrino, 1997), tax and regulatory advantages (Schipper & Smith, 1983), recontracting benefits after the spinoff (Aron, 1991; Li & Reis, 2012; Pyo, 2007), and reduced information asymmetry (Krishnaswami & Subramaniam, 1999). Management teams are generally perceived as being more efficient following a spinoff (Aron, 1991; Desai & Jain, 1999; Hite & Owers, 1983; Seward & Walsh, 1996).

The extant literature examining CEO compensation around spinoffs has focused on pay-for-performance sensitivity for CEOs of parent and subsidiary

firms (Li & Reis, 2012; Pyo, 2007). To our knowledge, no study has examined how spinoffs affect other practices that have received attention in the compensation literature. Specifically, relative performance evaluation (RPE), asymmetry in pay for luck, and benchmarking CEO pay have all been widely studied and are still being debated. The primary objective of this paper is to provide additional evidence on these practices by utilizing a sample of firms involved in a spinoff; our analysis will focus on the parent firm. The spinoff event allows the compensation committee to write new contracts – or re-contract in the case where the pre-spinoff parent CEO continues as CEO of the post-spinoff parent – based on the firm characteristics of the post-spinoff parent firm. The next section explains how firm characteristics that are altered by the spinoff are expected to affect the use of RPE, asymmetry in pay for luck, and benchmarking CEO pay.

Most of the CEOs in the post-spinoff parent firm sample come from the pre-spinoff firm. Of the 382 post-spinoff firm-year observations, 46% were previously CEO of the pre-spinoff firm, and 46% were former employees (non-CEO) of the pre-spinoff firm. Only 2% of the pre-spinoff CEO sample became CEO of the subsidiary following the spinoff. These numbers are comparable to Denis, Denis, and Walker (2012), who find that 50% of post-spinoff parent CEOs were pre-spinoff parent CEOs and 33% were former employees (non-CEO). Denis et al. document that 14% of their pre-spinoff CEO sample became CEO of the subsidiary. We focus our study on the parent firms because they have better coverage in Execucomp and offer a cleaner comparison of pre- versus post-spinoff firms.[1]

RPE, ASYMMETRIC PAY FOR SKILL/LUCK, AND COMPENSATION BENCHMARKING

Typically, pre-spinoff parent firms have multiple business divisions (Ahn & Denis, 2004; Burch & Nanda, 2003) and high information asymmetry between managers and the market (Krishnaswami & Subramaniam, 1999). Due to the information asymmetry and diversified nature of the pre-spinoff firms, the compensation committee faces at least two challenges when setting CEO compensation. First, as a result of information asymmetry, share price is a noisy signal of CEO productivity in pre-spinoff firms. The measures of information asymmetry used by Krishnaswami and Subramaniam (1999) are related to dispersion in returns or earnings. The dispersion in these information asymmetry measures is a proxy for the noise in firm

returns and share price. As information asymmetry increases, share price contains more noise and becomes less informative about CEO effort. Holmstrom (1979) argues that a signal about CEO effort is useful in constructing an optimal contract, but the usefulness of the signal decreases as the noise of the signal increases.

Second, because they have multiple business divisions (Ahn & Denis, 2004; Burch & Nanda, 2003), pre-spinoff firms may have trouble identifying peer firms. Pre-spinoff firms that have multiple business divisions in different industries are likely to be exposed to multiple sources of risk that other firms do not experience. Additionally, prior studies find that divisions doing business in industries different than the parent company's industry cause negative synergies in the parent company (Berger & Ofek, 1995). Daley, Mehrotra, and Sivakumar (1997) document that 70% of their spinoff sample had a subsidiary firm that was in a different industry than the parent firm.[2] If parent firms with cross-industry subsidiaries are subject to negative synergies, problems in one division can adversely affect other divisions of the company. Trying to make sense of the relation among divisions likely clouds valuation and identification of performance peers for pre-spinoff parent firms.

Following the spinoff, both of these challenges in setting compensation will be reduced for the parent company as both the number of divisions and information asymmetry are reduced. Further, because of their "clean slate for contracting" nature, spinoffs provide a natural setting in which to examine RPE, asymmetry in pay for skill/luck, and compensation benchmarking. The problems faced in setting compensation for pre-spinoff firms and their (partial) resolution in post-spinoff firms lead to several predictions about how these practices change around spinoffs.

Relative Performance Evaluation (RPE)

Holmstrom (1982) argues that systematic factors not resulting from CEO actions should be removed when evaluating the CEO. The adjustment provides a better signal of the CEO's performance and protects the CEO's compensation from shocks that are not under her control. RPE occurs when a CEO's performance is evaluated relative to a benchmark that is similarly exposed to and affected by exogenous shocks. Examples of benchmark groups used in RPE include custom peer groups, industry groups, and the overall market.

For example, in 2011, Kraft Foods compensated its CEO as follows: cash (base salary and incentive), benefits and perquisites, and long-term incentives that include restricted stock, non-qualified stock options, and performance shares. The long-term incentive performance shares were granted on a 50% basis of achieving internal financial metrics (organic revenue growth and operating earnings per share growth) and on a 50% basis of annualized total shareholder return relative to a performance peer group. The 50% weight determined by the relative annualized shareholder return is an example of RPE because the CEO will receive more compensation in the form of performance shares if she – Irene Rosenfeld – outperforms her performance benchmark group and less compensation if she does not. In this example, the performance peer group was a custom peer group selected by the compensation committee.

Despite its theoretical appeal, RPE has received mixed support empirically (Aggarwal & Samwick, 1999; Albuquerque, 2009, 2014; Antle & Smith, 1986; Garvey & Milbourn, 2003; Gibbons & Murphy, 1990; Rajgopal, Shevlin, & Zamora, 2006; among others). Part of the problem in documenting RPE is specifying the correct performance benchmark group. Prior to a 2006 SEC ruling, firms did not have to disclose the firms against which they explicitly benchmarked CEO performance and compensation. Thus, prior to 2006 it was impossible to know what benchmark, if any, was explicitly used when evaluating RPE. Recent studies have mitigated this problem by gathering explicit benchmark firms from company filings (De Angelis & Grinstein, 2011; Gong, Li, & Shin, 2011) and constructing better performance benchmarks for empirical tests (Albuquerque, 2009; Black, Dikolli, & Hofmann, 2015). Black et al. (2015) find evidence that firms use RPE even if they do not explicitly disclose using RPE in the proxy statement. Their finding is consistent with implicit contracts being important determinants of CEO compensation and validates the use of implicit tests for RPE studies.

In order to use RPE, the compensation committee has to be able to differentiate performance that is attributable to the CEO and performance that is a result of exposure to systematic risk or other factors outside of the CEO's control. Identifying these aspects of performance will allow the CEO to be rewarded/punished for performance attributable to her actions and shielded from performance not under her control. To the extent that these aspects of performance are difficult to measure accurately, implementing RPE becomes challenging (Holmstrom, 1982). We argue that prespinoff firms have two characteristics that make measuring both the performance attributable to the CEO and performance attributable to exogenous factors difficult.

First, pre-spinoff firms on average have higher information asymmetry between managers and the market than a matched sample of industry-size control firms (Krishnaswami & Subramaniam, 1999). Potential sources of the information asymmetry for the pre-spinoff firm are negative synergies between divisions and unreliable disclosure about the firm because it can manipulate costs, not observable by the market, that are shared among divisions (Krishnaswami & Subramaniam, 1999). The high information asymmetry results in a noisy share price that on average undervalues the firm's underlying assets.[3]

Even for members of the compensation committee, it is difficult to accurately attribute performance as being firm-specific, caused by exposure to multiple sources of exogenous risk (market-wide factors and factors due to exposure to multiple industries), or caused by exposure to negative synergies between divisions within the pre-spinoff firm. For a risk-averse CEO, the noisy share price that is on average under-valuing the firm (as shown by positive abnormal returns on the spinoff announcement) lowers the CEO's incentive to have pay tied to stock performance.[4] Moral hazard costs associated with information asymmetry can be reduced by RPE because of better risk sharing between the CEO and shareholders (Holmstrom, 1982); however, in the case of pre-spinoff firms, information asymmetry impedes RPE from being used. Thus, agency costs associated with information asymmetry are particularly severe for pre-spinoff firms. Krishnaswami and Subramaniam (1999) find that gains around the announcement of spinoffs are positively related to the degree of information asymmetry, which is consistent with this line of reasoning.

Second, pre-spinoff firms face more difficulty when constructing performance benchmarks. As mentioned above, pre-spinoff firms are potentially exposed to different sources of risk through their multiple divisions. Multifaceted risk makes finding benchmark firms that are similarly exposed difficult and further inhibits RPE from being used. Following the spinoff, information asymmetry and firm complexity are reduced, allowing compensation committees to better gauge aspects of performance and construct performance benchmarks. In accordance with Holmstrom (1982), RPE should be more widespread when there is less uncertainty regarding the choice of performance benchmark. This reasoning leads to our first hypothesis:

> **Hypothesis 1.** RPE is more prevalent in post-spinoff parent firms than in pre-spinoff parent firms.

The relative lack of RPE in pre-spinoff firms is also consistent with the model of Gopalan, Milbourn, and Song (2010), who argue that if CEOs in multi-divisional firms can change their firms' exposure to sector performance by altering firm strategy, they should be paid for sector performance to incentivize them to choose optimally, even if they have no control over sector performance. Later sections will differentiate our RPE hypothesis based on share price as a noisy signal and the Gopalan et al. hypothesis based on CEOs altering their firms' exposure to exogenous risk.

Pay for Skill/Luck Asymmetry

Garvey and Milbourn (2006) document that CEOs are paid for luck asymmetrically – they are rewarded for good luck (which increases compensation) but are not penalized to the same extent for bad luck (which decreases compensation). This finding is widely interpreted as being consistent with the managerial power view of CEO compensation (Frydman & Jenter, 2010). Others, however, find that paying CEOs for luck is not necessarily a result of CEO rent extraction. Bizjak, Lemmon, and Naveen (2008) find no asymmetry in pay for luck for firms that are paid above their peers and that the asymmetry is only found in firms with a CEO who is paid below the peer group median. They argue that CEOs paid below the median peer level receive increases in compensation for retention purposes and find no relation between weaker corporate governance and pay-for-luck asymmetry.

Oyer (2004) argues that paying for luck can be optimal if the CEO's reservation wage from outside employment opportunities varies with the economy. Rajgopal et al. (2006) test Oyer's theory and find supporting evidence of less RPE when the market is up but more RPE when the market is down. More recently, Daniel, Li, and Naveen (2016) find no asymmetry in pay-for-luck practices when using uncorrelated skill and luck measures along with CEO firm-related wealth, which includes existing stock and option holdings, instead of changes (Garvey & Milbourn, 2006) and level (Gopalan et al., 2010) of CEO annual pay.

As information asymmetry decreases and performance benchmarks become easier to identify, we expect CEO compensation sensitivity to luck to decrease following a spinoff because more systematic factors (i.e., luck) should be removed from CEO compensation. Using the sample of spinoffs, our primary focus in this section is to determine whether asymmetry in CEO compensation sensitivity to good and bad skill/luck is different for

pre- and post-spinoff parent firms. To develop the hypotheses about asymmetry in pay for skill/luck, we again rely on the difficulties compensation committees face in setting compensation for the pre-spinoff CEO.

Because of the noise in share price caused by information asymmetry and the difficulty in constructing performance benchmarks for pre-spinoff firms, skill proxies based on stock performance relative to a benchmark are difficult to measure. If the CEO is able to influence pay for skill as a result of this difficulty in measuring skill, then we expect an asymmetry in which CEOs are rewarded for good skill and not punished to the same extent for bad skill. Good skill should be rewarded because the CEO can always argue for RPE if she outperforms benchmarks. If the CEO exhibits bad skill, she will not argue for RPE and instead can argue the bad skill is a result of bad luck or failure of investors to realize the true firm value. This reasoning leads to our second hypothesis:

> **Hypothesis 2.** Pre-spinoff parent CEOs will be rewarded for good skill, but not punished to the same extent for bad skill.

We expect to also see asymmetry in pay for luck where pre-spinoff CEOs are rewarded for good luck and not punished to the same extent for bad luck. Multiple forces are likely to influence this asymmetry. First, due to the noise in share price and difficulty in forming performance benchmarks, the CEO can opportunistically argue that good luck is a result of skill while bad luck is not. Additionally, as stated by Gopalan et al. (2010), if CEOs of multi-divisional pre-spinoff firms sets firm strategy by changing firm exposure to sector performance, then the CEOs should optimally be rewarded for sector performance (luck) and punished to a lesser extent given the CEOs have high enough risk aversion. This reasoning leads to our third hypothesis:

> **Hypothesis 3.** Pre-spinoff parent CEOs will be rewarded for good luck, but not punished to the same extent for bad luck.

For post-spinoff firms, we do not expect to see asymmetry in pay for skill or luck. CEOs should still be rewarded for good skill because they are more likely to receive (and can argue for) RPE. However, bad skill should be easier to identify and penalize in post-spinoff firms because share price is less noisy and performance benchmarks are easier to identify. Similarly, luck should be easier to identify for post-spinoff firms and should not be rewarded or punished. This reasoning leads to hypotheses 4 and 5:

> **Hypothesis 4.** Post-spinoff parent CEOs will be rewarded for good skill, and equally punished for bad skill.

Hypothesis 5. Post-spinoff parent CEOs will not be rewarded or punished for good or bad luck, respectively.

All of the asymmetry tests may be biased toward finding asymmetry to the extent that measures of luck and skill affect CEO option value. Based on the challenges compensation committees face in setting pre-spinoff CEO compensation, CEOs with relatively large pay-for-performance sensitivities (PPS) have a greater incentive to complete a spinoff. Also, our results in Table 3 and findings from Pyo (2007) suggest that CEO PPS increases following a spinoff. Thus, the spinoff sample may be prone to asymmetry. Given the bias to asymmetry, we use a sample where the pre-spinoff CEO continues as CEO of the post-spinoff parent firm (we exclude CEOs that continue to the subsidiary because of a lack of observations). The matched CEO sample helps alleviate the asymmetry bias when comparing asymmetry in pay for skill/luck between pre- and post-spinoff CEOs.

Benchmarking CEO Pay

Benchmarking CEO pay is the widespread practice of targeting CEO compensation levels at a benchmark representing a group of firms that compete in the same CEO labor pool. Although similar to performance benchmarks, compensation benchmarks are used to determine the appropriate level of compensation, where RPE benchmarks are used to better gauge CEO performance by filtering out common risk factors. Gong et al. (2011) report a median 81% overlap rate (number of common firms in the two benchmark groups divided by number of RPE benchmark firms) between the RPE and compensation benchmark groups. Yet, they still find that the selection of each group reflects different considerations, which is consistent with the notion that the two benchmark groups serve different purposes. Thus, a separate analysis of RPE and compensation benchmarks is warranted.

Proponents of benchmarking CEO pay to a peer group of similar companies claim the practice is used to determine reservation wages for CEOs (Holmstrom & Kaplan, 2003), and empirical studies have shown benchmarking CEO pay to be associated with firm performance, tighter labor markets (Bizjak et al., 2008), and CEO skill (Albuquerque, De Franco, & Verdi, 2013). Opponents of benchmarking CEO pay claim that powerful CEOs opportunistically choose peer companies with highly paid CEOs (Bizjak, Lemmon, & Nguyen, 2011; Faulkender & Yang, 2010, 2013).

The problems identified earlier that compensation committees face when setting compensation for pre-spinoff firms are less likely to affect compensation benchmarking. Noise in firm stock price and difficulty in constructing performance benchmarks do not clearly lead to difficulty in constructing compensation benchmarks. Compensation benchmark firms do not have to be exposed to similar exogenous risk, they only have to hire from the same talent pool.

However, spinoffs affect multiple firm characteristics that can impact compensation benchmarking. Post-spinoff firms are smaller (measured by revenue) and less complex because they divest a business division. CEOs of larger companies typically receive higher compensation than CEOs of smaller companies (Gabaix & Landier, 2008). This reasoning suggests that post-spinoff CEOs will receive less compensation on average than pre-spinoff CEOs. However, the model by Gabaix and Landier predicts that managerial talent drives the difference in salaries between small and large companies. With spinoffs, it is difficult to argue that the post-spinoff CEOs are more or less talented than the pre-spinoff CEOs (especially when the pre-spinoff CEO becomes the post-spinoff CEO). So on average, even though firm size decreases following the spinoff, we would not necessarily expect CEO compensation to decrease because CEO talent does not necessarily decrease.

Because CEO talent does not decrease following the spinoff, post-spinoff firms likely hire from the same talent pool as they did when they were pre-spinoff. If so, then the compensation benchmark group used by both pre- and post-spinoff firms will be similar. When testing for compensation benchmarking, this similarity means that post-spinoff firms will appear to be benchmarking to larger firms with higher compensated CEOs than their industry-size peers. This reasoning leads to our next hypothesis:

> **Hypothesis 6.** Post-spinoff parent CEOs will receive higher increases in compensation due to benchmarking than pre-spinoff CEOs.

DATA AND SAMPLE SELECTION

Data Selection

We start by using SDC to identify firms that complete a spinoff between 1992 and 2012 and also distribute at least 80% of the shares of the subsidiary. The 80% requirement identifies tax-free spinoffs. About 60 spinoffs from the SDC sample have the same company listed as a parent and subsidiary. For these spinoffs, we look at the synopsis in SDC to determine the

actual parent and subsidiary companies and look up the correct identifiers for those firms. Next, we match the spinoff firms with available CUSIP identifiers to CRSP and Compustat. Of the 557 spinoffs identified in SDC, we match 315 of the parent firms (the pre- and post-spinoff firm share the same identifier). We hand check firms that matched to more than one PERMNO identifier in CRSP and selected the most appropriate PERMNO based on company name and available date range.

The final step is to collect firm-year data. We collect return data from CRSP, financial data from Compustat, and compensation data from Execucomp. We match firm-year observations if the fiscal year end occurred within three years before, or four years after the spinoff, and exclude observations with a fiscal year during which the spinoff occurred. We exclude these observations to better identify pre- and post-spinoff observations. For example, if a spinoff occurred one week before the fiscal year end, the classification scheme would label that observation as post-spinoff, even though the firm was pre-spinoff for the majority of the fiscal year. Because we exclude the fiscal year during which the spinoff occurred, we match post-spinoff firm-year observations over four years (instead of three) to better balance the pre- and post-spinoff firm-year observations. For a given firm, we also require the number of pre-spinoff observations to be equal to the number of post-spinoff observations. The final sample has slightly more post-spinoff observations due to the deletions caused by overlapping firm-year windows described below.

Some firms in the sample conducted more than one spinoff. To deal with potential offsetting effects from overlapping firm-year windows, we excluded 134 firm-year observations for being in both the pre- and post-spinoff parent sample. We allowed duplicate firm-year observations if they are all post-spinoff parent observations or all pre-spinoff parent observations. Allowing these duplicates gives more weight to firm-year observations of companies that completed multiple spinoffs if they did so within a relatively short time period. As shown in Panel B of Table 1, 83% of the sample firm-year observations have no duplicates. Table 1, Panel C shows the final sample is weighted more toward the beginning of the sample period during the 1990s and early 2000s. The most active year for spinoffs in the sample is 1996, with 28 spinoffs, and the least active spinoff year is 2004, with seven spinoffs.

Data Characteristics

Table 2 contains summary statistics for the sample. Naturally, pre-spinoff firms (Panel A) are larger (as measured by revenue) than post-spinoff

Table 1. Sample Selection.

Panel A

Spinoffs identified in SDC with effective date between 1992 and 2012 that have completed spinoff with at least 80% shares acquired	557
Parent companies (pre- and post-spinoff) in CRSP/Compustat	315
Parent firm-year observations with fiscal year end less than 3 years before spinoff in CRSP/Compustat/Execucomp	379
Parent firm-year observations with fiscal year end less than 4 years after spinoff in CRSP/Compustat/Execucomp[a]	390

Panel B

Duplicate Observations	Pre-Spinoff	Post-Spinoff	Total Firm-Year Observations
0	299	308	607
1	19	24	86
2	2	2	12
3	1	5	24
Total firm-year observations	347	382	729

Panel C

Year	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1992	11	3.49	11	3.49
1993	19	6.03	30	9.52
1994	17	5.4	47	14.92
1995	19	6.03	66	20.95
1996	28	8.89	94	29.84
1997	24	7.62	118	37.46
1998	15	4.76	133	42.22
1999	18	5.71	151	47.94
2000	22	6.98	173	54.92
2001	19	6.03	192	60.95
2002	10	3.17	202	64.13
2003	10	3.17	212	67.3
2004	7	2.22	219	69.52
2005	9	2.86	228	72.38
2006	8	2.54	236	74.92
2007	16	5.08	252	80

Table 1. (*Continued*)

Panel C				
Year	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2008	15	4.76	267	84.76
2009	11	3.49	278	88.25
2010	12	3.81	290	92.06
2011	12	3.81	302	95.87
2012	13	4.13	315	100

Notes: Panel A contains information on the sample construction. Panel B lists the number of duplicate observations in the sample as a result of overlapping firm-year windows around the spinoff. Panel C shows the distribution of CRSP-matched spinoffs in the sample by the year the spinoff was completed.
[a]The fiscal year in which the spinoff occurred is omitted.

firms (Panel B). Despite being smaller, the post-spinoff parent firms have an almost identical median total compensation level ($3.79 million) relative to their pre-spinoff counterparts ($3.72 million). Other notable differences between pre-and post-spinoff parent firms include post-spinoff parents having higher variance (both total return and idiosyncratic) and higher book-to-market ratios. Breaking down total CEO compensation into its main components, post-spinoff parent CEOs receive a lower salary and bonus, but higher stock grants. Panels C and D of Table 2 use a sample that includes firm-year observations only if the pre-spinoff CEO is the same as the post-spinoff CEO. This specification helps alleviate fears that differences in variables across the spinoff subsamples are driven by CEO characteristics.

EMPIRICAL TESTS AND RESULTS

RPE

Our sample contains 36 firms that completed a spinoff after the 2006 SEC disclosure ruling. For those 36 firms, we collected information on explicit RPE use from the firms' proxy statements for the year directly before and after the spinoff using the methodology described by Gong et al. (2011). Six of the 36 firms went from being non-RPE firms before the spinoff to

Table 2. Descriptive Statistics.

Panel A: Pre-Spinoff Parent Firms						
Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Log total compensation	347	8.18	8.22	1.23	0.66	0.74
Firm stock return	347	0.14	0.10	0.47	0.12	0.28
Peer return (industry-size)	347	0.13	0.13	0.27	0.32	0.32
Peer return (industry)	347	0.17	0.14	0.33	0.89	0.25
S&P 500 return	347	0.10	0.12	0.17	0.00	0.94
Luck	347	13.05	14.17	27.20	0.86	0.48
Skill	347	−2.81	−1.34	29.10	0.03	0.13
Bad luck	347	0.24	0	0.43	0.23	0.23
Bad skill	347	0.52	1.00	0.50	0.17	0.17
Compensation distance	274	−2260.81	−247.80	6,752.64	0.95	0.65
Low compensation indicator	274	0.40	0	0.49	0.51	0.51
CDF compensation distance	274	0.47	0.45	0.27	0.56	0.43
Market beta	347	0.34	0.32	0.76	0.01	0.11
Return variance	347	7.12	3.47	10.43	0	0
Idiosyncratic variance	347	1.85	1.54	1.17	0.00	0.00
Log revenue	347	8.25	8.18	1.51	0.01	0.01
Book-to-market	347	0.54	0.41	0.57	0.00	0.04
Regulation	347	0.04	0	0.19	0.95	0.95
Interlock	347	0.08	0	0.27	0.00	0.00
Tenure	347	7.49	7.62	0.95	0	0
Herfindahl	347	0.04	0.03	0.04	0.35	0.01
Divisions	347	6.53	6.00	3.80	0.97	0.82
Total compensation	347	7106.38	3719.52	10763.49	0.03	0.74
Salary	347	697.38	648.13	392.57	0.02	0.15
Bonus	347	930.64	462.30	1,550.49	0.01	0.01
Other compensation	347	251.00	86.61	587.85	0.17	0.97
Stock grants	347	706.47	0	1,639.16	0.02	0.01
Option awards	347	3765.32	1006.26	9560.92	0.01	0.85

Table 2. (*Continued*)

Panel B: Post-Spinoff Parent Firms						
Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Log total compensation	382	8.14	8.24	1.02	0.66	0.74
Firm stock return	382	0.21	0.13	0.66	0.12	0.28
Peer return (industry-size)	382	0.11	0.10	0.29	0.32	0.32
Peer return (industry)	382	0.17	0.11	0.39	0.89	0.25
S&P 500 return	382	0.06	0.13	0.20	0.00	0.94
Luck	382	12.67	12.40	30.51	0.86	0.48
Skill	382	2.45	1.87	35.39	0.03	0.13
Bad luck	382	0.28	0	0.45	0.23	0.23
Bad skill	382	0.47	0	0.50	0.17	0.17
Compensation distance	311	−2222.33	−199.37	6,986.30	0.95	0.65
Low compensation indicator	311	0.42	0	0.50	0.51	0.51
CDF compensation distance	311	0.48	0.48	0.27	0.56	0.43
Market beta	382	0.18	0.21	0.82	0.01	0.11
Return variance	382	10.21	5.53	14.84	0.00	0
Idiosyncratic variance	382	2.12	1.81	1.35	0.00	0.00
Log revenue	382	7.96	7.91	1.52	0.01	0.01
Book-to-market	382	0.70	0.48	0.78	0.00	0.04
Regulation	382	0.04	0	0.19	0.95	0.95
Interlock	382	0.03	0	0.18	0.00	0.00
Tenure	382	7.09	7.00	0.89	0	0
Herfindahl	382	0.04	0.03	0.04	0.35	0.01
Total compensation	382	5589.70	3793.85	6880.79	0.03	0.74
Salary	382	638.07	621.77	290.35	0.02	0.15
Bonus	382	657.86	314.29	1143.41	0.01	0.01
Other compensation	382	318.88	90.13	728.76	0.17	0.97
Stock grants	382	1002.93	0	1796.90	0.02	0.01
Option awards	382	2,251.88	1,019.54	4,666.75	0.01	0.85

Table 2. (*Continued*)

Panel C: Pre-Spinoff Parent Firms with Matched CEO						
Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Log total compensation	218	8.27	8.25	1.11	0.60	0.16
Firm stock return	218	0.13	0.09	0.41	0.35	0.31
Peer return (industry-size)	218	0.13	0.12	0.28	0.59	0.84
Peer return (industry)	218	0.18	0.15	0.34	0.75	0.54
S&P 500 return	218	0.11	0.13	0.17	0.14	0.92
Luck	218	12.30	13.65	28.34	0.85	1.00
Skill	218	−2.71	−2.11	24.45	0.05	0.11
Bad luck	218	0.25	0	0.43	0.94	0.94
Bad skill	218	0.54	1.00	0.50	0.13	0.13
Compensation distance	163	−1956.79	−208.46	6,463.08	0.81	0.74
Low compensation indicator	163	0.42	0	0.50	0.78	0.78
CDF compensation distance	163	0.46	0.46	0.28	0.50	0.59
Market beta	218	0.33	0.24	0.76	0.02	0.11
Return variance	218	6.23	3.23	7.94	0.13	0.03
Idiosyncratic variance	218	1.79	1.57	0.91	0.71	0.31
Log revenue	218	8.21	8.19	1.45	0.14	0.02
Book-to-market	218	0.50	0.41	0.35	0.26	0.84
Regulation	218	0.02	0	0.14	0.52	0.51
Interlock	218	0.09	0	0.28	0.24	0.25
Tenure	218	7.37	7.49	1.00	0	0.16
Herfindahl	218	0.04	0.03	0.04	0.93	0.06
Divisions	218	6.59	6.00	4.05	0.26	0.42
Total compensation	218	7414.50	3807.00	11725.53	0.15	0.16
Salary	218	708.55	661.45	367.09	0.08	1.00
Bonus	218	851.97	551.29	1294.79	0.02	0.02
Other compensation	218	276.73	98.27	634.58	0.49	0.69
Stock grants	218	672.82	0	1,588.01	0.02	0.48
Option awards	218	4,278.86	1,128.94	10,903.13	0.01	1.00

Table 2. (*Continued*)

Panel D: Post-Spinoff Parent Firms with Matched CEO						
Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Log total compensation	176	8.21	8.38	1.09	0.60	0.16
Firm stock return	176	0.18	0.13	0.51	0.35	0.31
Peer return (industry-size)	176	0.12	0.12	0.30	0.59	0.84
Peer return (industry)	176	0.17	0.14	0.38	0.75	0.54
S&P 500 return	176	0.08	0.13	0.19	0.14	0.92
Luck	176	11.76	13.48	27.89	0.85	1.00
Skill	176	2.72	2.46	28.61	0.05	0.11
Bad luck	176	0.24	0	0.43	0.94	0.94
Bad skill	176	0.46	0	0.50	0.13	0.13
Compensation distance	171	−1786.18	−135.54	6529.21	0.81	0.74
Low compensation indicator	171	0.44	0	0.50	0.78	0.78
CDF compensation distance	171	0.48	0.49	0.27	0.50	0.59
Market beta	176	0.15	0.10	0.78	0.02	0.11
Return variance	176	7.54	4.60	9.08	0.13	0.03
Idiosyncratic variance	176	1.82	1.63	0.88	0.71	0.31
Log revenue	176	8.00	7.97	1.44	0.14	0.02
Book-to-market	176	0.55	0.41	0.53	0.26	0.84
Regulation	176	0.03	0	0.17	0.52	0.51
Interlock	176	0.06	0	0.23	0.24	0.25
Tenure	176	7.73	7.66	0.73	0	0.16
Herfindahl	176	0.04	0.03	0.03	0.93	0.06
Total compensation	176	6058.19	4362.86	6810.70	0.15	0.16
Salary	176	651.90	662.38	281.61	0.08	1.00
Bonus	176	606.60	315.19	780.55	0.02	0.02
Other compensation	176	323.64	103.90	690.18	0.49	0.69
Stock grants	176	1095.35	0	1786.55	0.02	0.48
Option awards	176	2239.60	1140.67	3851.77	0.01	1.00

Table 2. (*Continued*)

Panel E: Pre-Spinoff Correlation Matrix

	Firm Stock Return	Peer Return (Industry-size)	Peer Return (Industry)	S&P 500 Return
Firm stock return				
Peer return (industry-size)	0.480			
Peer return (industry)	0.442	0.923		
S&P 500 return	0.366	0.517	0.432	

Panel F: Post-Spinoff Correlation Matrix

	Firm Stock Return	Peer Return (Industry-size)	Peer Return (Industry)	S&P 500 Return
Firm stock return				
Peer return (industry-size)	0.571			
Peer return (industry)	0.496	0.925		
S&P 500 return	0.409	0.677	0.584	

Panel G: Benchmark Regressions	Pre-Spinoff		Post-Spinoff	
	Beta	Adjusted *R*-squared	Beta	Adjusted *R*-squared
Peer return (industry-size)	0.594	0.250	1.195	0.352
Peer return (industry)	0.472	0.237	0.743	0.299
S&P 500 return	0.767	0.183	1.930	0.262

Notes: Panel A provides summary statistics on the pre-spinoff parent sample. Panel B details post-spinoff parent firms. Panels C and D provide summary statistics for pre- and post-spinoff firms for which we were able to confirm that the last CEO of the pre-spinoff firm stayed as CEO of the post-spinoff parent firm; for these tables, the CEO in the pre-spinoff firm sample is also in the post-spinoff parent firm sample. Panels E and F are correlation matrices of the fiscal-year return variables for pre- and post-spinoff observation, respectively. Panel G shows selected results of regressing the firm stock return over the fiscal year on different benchmark returns and year fixed effects. Compensation data are denominated in thousands of constant 1992 dollars. Financial data are denominated in millions of constant 1992 dollars. Variable definitions are in appendix.

RPE firms after the spinoff, 10 firms were RPE users before and after the spinoff, and 20 firms were non-RPE users before and after the spinoff. While this subsample is small, the fact that 23% (6 of 26) of the non-RPE firms prior to the spinoff became RPE firms following the spinoff and zero firms went from being RPE to non-RPE firms provides anecdotal evidence supporting an increase in RPE use following a spinoff.

In order to utilize the full spinoff sample in the empirical tests, we use a regression similar to Albuquerque (2009), who uses the following specification:

$$\text{CEOPay}_{it} = a_0 + a_1\ \text{FirmPerf}_{it} + a_2\ \text{BenchPerf}_{it} + a_3\ \text{ControlVariables}_{it} + e_{it} \tag{1}$$

Subscript t indicates the year and subscript i indicates the firm-benchmark pair. CEOPay_{it} is the compensation of the CEO, measure as both the log of total compensation and the change in log compensation. FirmPerf_{it} and BenchPerf_{it} are performance measures for the firm-benchmark pair i. We use stock returns to measure the performance variables and industry-size benchmark groups. Control variables account for factors affecting CEO compensation not related to firm or benchmark performance. Appendix contains variable definitions.

Table 2, Panels E through G, provides evidence on the most appropriate benchmark group. The performance benchmark used for RPE should have similar exposure to exogenous shocks as the spinoff firm. Panels E (pre-spinoff) and F (post-spinoff) show the correlation among the spinoff firm fiscal-year returns and potential benchmark returns over the same period. The industry-size benchmark has the highest correlation to the spinoff-firm stock returns for both the pre- and post-spinoff sample. Panel G shows the pre- and post-spinoff results of regressing the spinoff-firm fiscal-year returns on a potential benchmark return and year fixed effects (fixed effects output omitted). The regression specification with the industry-size benchmark group has the highest adjusted R-squared value for both the pre- and post-spinoff sample.

De Angelis and Grinstein (2011) document that 34% of S&P 500 firms claim to use RPE in 2007. Of those firms claiming to use RPE, 39% benchmark against either a market-wide or industry-wide index, and 61% benchmark against a "home-made" peer group, providing support for the industry-size benchmark used by Albuquerque (2009). The results from

Table 2 and evidence from prior studies supports the use of the industry-size benchmark.

Table 3 has the results of Eq. (1) using indicator interaction terms for pre- and post-spinoff with firm and benchmark returns. Panel A uses the log of total compensation as the dependent variable and Panel B uses change in log compensation as the dependent variable. In Panel B, log revenue and book-to-market are also defined as changes in those variables. The results in Table 3, Panel A, indicate that, ceteris paribus, a firm's stock return is not significantly related to total compensation for pre-spinoff observations. Furthermore, the coefficient for the pre-spinoff peer return is positive and significant.

For post-spinoff firms, the coefficient on firm stock return increases in magnitude and significance compared to the pre-spinoff sample. Also, the peer return has a negative coefficient for the post-spinoff sample (although not statistically significant). The results suggest RPE is more prevalent in post-spinoff firms than pre-spinoff firms, supportive of Hypothesis 1.

The rows at the bottom of Tables 3 and 4 have *p*-values for the RPE test of:

$$\text{Firm stock return} \times \text{Spinoff indicator} + \text{Peer return} \times \text{Spinoff indicator} = 0$$

In the pre-spinoff test, the *p*-value is 0.04, rejecting the use of RPE. The post-spinoff test does not reject the use of RPE with a *p*-value of 0.91. The RPE test results from Panel B offer the same conclusions as Panel A. Additionally, Table 3 reports the differences in the pre- and post-spinoff coefficients for the firm stock return and peer return. Compared to pre-spinoff CEOs, post-spinoff CEOs have compensation that is more sensitive to firm performance (significant near the 10% level), and less sensitive to exogenous shocks as measured by industry-size returns (significant at the 5% level).

One concern when examining RPE is difference in CEO ability. Oyer (2004) argues that an absence of RPE is optimal for talented CEOs because the CEO's reservation wages from outside employment varies with the economy. To alleviate this concern, the regressions in Table 4 use a sample in which every CEO in the pre-spinoff sample is also in the post-spinoff sample.

The results in Table 4 are not as supportive of Hypothesis 1 as those in Table 3. None of the coefficients dealing with firm or benchmark returns is statistically significant. The tests at the bottom of the table are not informative in light of the weak significance of the variables of interest.

Table 3. RPE Pre- and Post-Spinoff Parent Firms.

Full Sample Regression	Panel A		Panel B	
	Log (Compensation)		Change in log (Compensation)	
Independent Variables	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Firm stock return × Pre-spinoff	−0.031	−0.24	−0.074	−0.56
Peer return (industry-size) × Pre-spinoff	0.503**	2.27	0.455**	2.44
Firm stock return × Post-spinoff	0.172**	2.03	0.173	1.33
Peer return (industry-size) × Post-spinoff	−0.145	−0.55	−0.111	−0.38
Log revenue	0.412***	7.9	0.138	0.78
Book-to-market	−0.072	−0.49	0.094	1.01
Market beta	0.051	0.73	−0.020	−0.55
Return variance	−0.007	−1.37	−0.009**	−2.56
Regulation	−0.936***	−3.14	−0.075	−0.35
Interlock	0.281*	1.78	0.030	0.3
Tenure	−0.03	−0.57	−0.020	−0.54
Herfindahl	0.968	0.24	2.945	0.97
Lag log (compensation)			−0.212***	−5.71
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.374		0.119	
Number of observations	729		580	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Firm stock return	0.203	1.6	0.247	1.58
Peer return (industry-size)	−0.649**	−2.2	−0.566*	−1.96
Pre-spinoff RPE test *p*-value	0.041		0.037	
Post-spinoff RPE test *p*-value	0.912		0.792	

Notes: This table tests RPE use for pre- and post-spinoff parent firms using Eq. (1). Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient. *, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

Overall, the tests in Table 3 show that CEO compensation is more sensitive to peer performance than firm performance for pre-spinoff firms. Following the spinoff, the sensitivity of compensation to firm performance increases and the sensitivity of compensation to peer performance decreases

and becomes negative (although not statistically significant). These results are consistent with Hypothesis 1 – RPE is used more in firms following a spinoff than for pre-spinoff firms. The tests in Table 4 using a matched CEO sample are not as supportive of Hypothesis 1.

Recall that RPE practices could change following the spinoff for two reasons: share price noise could be reduced and benchmark firms could be easier to identify following the spinoff. The descriptive statistics in Table 2, Panels A through D, show that idiosyncratic variance, the main measure of share price noise, increases for the post-spinoff parent sample. This finding contradicts Krishnaswami and Subramaniam (1999), who find that idiosyncratic variance decreases for their post-spinoff parent sample. Table 2, Panels E through G, indicate that the post-spinoff parent returns are more closely associated with the benchmark return than the pre-spinoff parent returns. These findings suggest that the increase in RPE use for post-spinoff firms documented in Table 3 are due to benchmark firms being easier to identify following the spinoff and not due to a decrease in share price noise.

Pay for Skill/Luck Asymmetry

To measure skill and luck, we follow Carhart (1997) and regress daily excess firm stock returns on the daily Fama-French and momentum factors over the fiscal year during which the compensation occurs. To account for nonsynchronous trading, we also include one lag return for each factor, following Lewellen and Nagel (2006). The regression model is:

$$r_{i,t} = \propto_i + \beta_{i,0} r_{m,t} + \beta_{i,1} r_{m,t-1} + \beta_{i,2} r_{\text{smb},t} + \beta_{i,3} r_{\text{smb},t-1} + \beta_{i,4} r_{\text{hml},t} + \beta_{i,5} r_{\text{hml},t-1} + \beta_{i,6} r_{\text{mom},t} + \beta_{i,7} r_{\text{mom},t-1} \quad (2)$$

where $r_{i,t}$ is the excess return on stock i, $r_{m,t}$ is the excess market return, $r_{\text{smb},t}$ is the return on the "small minus big" portfolio, $r_{\text{hml},t}$ is the return on the "high minus low" portfolio, and $r_{\text{mom},t}$ is the return on momentum portfolio on day t.[5] The intercept (alpha) is the measure of skill, and the average excess return over the year minus the intercept is the measure of luck. Multiplying by 250 annualizes both skill and luck. These measures of skill and luck are widely used in the mutual fund literature and also used by Daniel, Li, and Naveen (2016) in their study of asymmetry in pay for luck.[6]

Table 4. RPE Pre- and Post-Spinoff Using Matched CEO Sample.

Matched CEOs Regression	Panel A		Panel B	
	Log (Compensation)		Change in log (Compensation)	
Independent Variables	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Firm stock return × Pre-spinoff	−0.063	−0.35	−0.149	−0.9
Peer return (industry-size) × Pre-spinoff	0.256	0.89	0.181	0.86
Firm stock return × Post-spinoff	0.057	0.28	−0.072	−0.3
Peer return (industry-size) × Post-spinoff	0.284	0.83	0.316	0.85
Log revenue	0.384***	4.04	0.184	0.82
Book-to-market	−0.277	−1.09	0.090	0.6
Market beta	0.08	0.83	−0.037	−0.85
Return variance	0.002	0.19	−0.015**	−2.15
Regulation	−0.58	−1.35	−0.361	−1.12
Interlock	0.182	0.88	0.155	1.57
Tenure	−0.065	−0.82	−0.060	−1.39
Herfindahl	2.766	0.5	−3.982	−0.95
Lag log (compensation)			−0.199***	−3.92
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.357		0.131	
Number of observations	394		330	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Firm stock return	0.119	0.47	0.077	0.310
Peer return (industry-size)	0.027	0.07	0.134	0.340
Pre-spinoff RPE test *p*-value	0.494		0.880	
Post-spinoff RPE test *p*-value	0.202		0.203	

Notes: This table tests RPE use for pre- and post-spinoff firms using Eq. (1). The sample includes pre- and post-spinoff firms where we were able to confirm the last CEO of the pre-spinoff firm stayed as CEO of the post-spinoff parent firm, so for this table, the CEO in the pre-spinoff firm sample is also in the post-spinoff parent firm sample. Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

The correlation between skill and luck is 0.03. The indicator variables bad skill and bad luck take values of one when skill and luck are less than zero.

The results in Table 5, Panel A, show that pre-spinoff firms do not reward CEOs for either skill or luck. However, the coefficient of skill increases and

Table 5. Pay for Skill/Luck in Pre- and Post-Spinoff Parent Firms.

Full Sample Regression	Panel A		Panel B	
	Log (Compensation)		Change in log (Compensation)	
Independent Variables	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Skill × Pre-spinoff	−0.001	−0.62	−0.001	−0.77
Luck × Pre-spinoff	0.003	0.94	0.002	1.29
Skill × Post-spinoff	0.002*	1.77	0.001	1.23
Luck × Post-spinoff	0.001	0.55	0.004**	2.18
Log revenue	0.415***	7.89	0.142	0.75
Book-to-market	−0.067	−0.46	0.102	1.79
Market beta	0.055	0.79	−0.015	−0.57
Return variance	−0.006	−1.24	−0.008**	−2.32
Regulation	−0.903***	−2.98	−0.102	−0.68
Interlock	0.301*	1.88	0.028	0.26
Tenure	−0.032	−0.61	−0.011	0.15
Herfindahl	1.363	0.33	2.021	0.47
Lag log (compensation)			−0.203***	−5.56
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.370		0.113	
Number of observations	729		580	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Skill	0.003	1.62	0.002	1.33
Luck	−0.002	−0.53	0.001	0.73

Notes: This table tests pay for skill/luck in pre- and post-spinoff firms. Skill is defined as the alpha from Eq. (2) and luck is the average daily excess return over the fiscal year minus skill. Multiplying by 250 annualizes both skill and luck. Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.
*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

becomes statistically significant for post-spinoff firms while the luck coefficient remains insignificant. The coefficients of the skill and luck variables in Panel B, where the dependent variable is change in log compensation, are not statistically significant for the pre-spinoff observations. The luck coefficient becomes positive and significant (5% level) for the post-spinoff sample in Panel B. The bottom of the table compares pre- and post-spinoff skill and luck coefficients. In Panel A, compensation is more sensitive to skill (significant near the 10% level) for post-spinoff firms.

When using the matched CEO sample in Table 6, the skill and luck coefficients are again statistically insignificant for Panel A while the luck coefficient is positive and significant (10% level) for post-spinoff firms in Panel B. The results in Tables 5 and 6 offer mixed support for Hypothesis 1.

Tables 7 and 8 examine if skill and luck are rewarded asymmetrically. Table 7, Panel A shows good luck is rewarded for both pre- and post-spinoff firms. The luck × bad luck coefficient is negative and significant for post-spinoff firms and is larger in magnitude than the luck coefficient; during periods of bad luck (luck < 0), compensation increases as luck becomes more negative for post-spinoff firms. Table 7, Panel B does not display the same asymmetry in pay for luck for post-spinoff firms. The pre- and post-spinoff coefficients on the skill and luck variables are not significantly different. Table 8 uses the sample of matched CEOs. Both panels show post-spinoff CEOs are rewarded for good luck and not punished for bad luck. The bottom of Table 8 shows that post-spinoff firms reward CEOs more for good luck (Panel B) and reward them less for good skill (Panel A) than pre-spinoff firms. The results in Tables 7 and 8 do not support Hypotheses 2 through 5. Instead, the main result from the tables suggests that post-spinoff CEOs are rewarded asymmetrically for luck while pre-spinoff CEOs are not.

Compensation Benchmarking

To construct the compensation peer groups, we create five size groups from all firms in Execucomp according to prior year market cap for each year and industry (Fama-French 12 industries).[7] We define the variable compensation distance each year as the prior year's median compensation level from the industry-size group minus the compensation level of the firm in the same industry-size group. Thus, CEOs with a positive compensation distance are paid below the median of the industry-size peer group in the prior year. The low compensation indicator variable takes a value of one if compensation distance is positive and zero otherwise.

Table 6. Pay for Skill/Luck in Pre- and Post-Spinoff Firms Using Matched CEO Sample.

Matched CEOs Regression	Panel A		Panel B	
Independent Variables	Log (Compensation)		Change in log (Compensation)	
	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Skill × Pre-spinoff	0.001	0.35	−0.002	−0.69
Luck × Pre-spinoff	0.001	0.30	0.000	0.15
Skill × Post-spinoff	0.001	0.27	−0.001	−0.47
Luck × Post-spinoff	0.003	1.04	0.005**	2.05
Log revenue	0.387***	4.06	0.164	0.70
Book-to-market	−0.290	−1.12	0.138	1.03
Market beta	0.080	0.85	−0.039	−0.85
Return variance	0.002	0.20	−0.016**	−2.51
Regulation	−0.619	−1.44	−0.441	−1.39
Interlock	0.173	0.82	0.141	1.37
Tenure	−0.066	−0.82	−0.052	−1.19
Herfindahl	2.427	0.43	−5.343	−1.26
Lag log (compensation)			−0.190***	−3.73
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.356		0.144	
Number of observations	394		330	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Skill	0.000	−0.06	0.001	0.22
Luck	0.002	0.73	0.004*	1.73

Notes: This table tests pay for skill/luck in pre- and post-spinoff firms with matched CEOs. The sample includes pre- and post-spinoff firms where we were able to confirm the last CEO of the pre-spinoff firm stayed as CEO of the post-spinoff parent firm, so for this table, the CEO in the pre-spinoff firm sample is also in the post-spinoff parent firm sample. Skill is defined as the alpha from Eq. (2) and luck is the average daily excess return over the fiscal year minus skill. Multiplying by 250 annualizes both skill and luck. Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.
*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 7. Asymmetry in Pay for Skill/Luck for Pre- and Post-Spinoff Parent Firms.

Full Sample Regression	Panel A		Panel B	
Independent Variables	Log (Compensation)		Change in log (Compensation)	
	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Skill × Pre-spinoff	0.003	0.94	−0.001	−0.19
Luck × Pre-spinoff	0.006*	1.67	0.003	1.15
Skill × Bad skill × Pre-spinoff	−0.007	−1.39	−0.001	−0.16
Luck × Bad luck × Pre-spinoff	−0.011	−1.62	−0.002	−0.32
Skill × Post-spinoff	0.003	1.14	0.001	0.26
Luck × Post-spinoff	0.007**	2.33	0.004*	1.76
Skill × Bad skill × Post-spinoff	−0.002	−0.55	0.001	0.14
Luck × Bad luck × Post-spinoff	−0.020***	−3.53	−0.002	−0.39
Other control variables	Yes		Yes	
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.379		0.107	
Number of observations	729		580	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Skill	0.000	0.08	0.001	0.440
Luck	0.001	0.27	0.002	0.550
Skill × Bad skill	0.005	0.83	0.002	0.3
Luck × Bad luck	−0.009	−1.06	0.000	−0.04

Notes: This table tests for asymmetry in pay for skill/luck in pre- and post-spinoff firms. Skill is defined as the alpha from Eq. (2) and luck is the average daily excess return over the fiscal year minus skill. Multiplying by 250 annualizes both skill and luck. Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

The CDF compensation distance variable is the cumulative distribution function (CDF) of the compensation distance variable calculated each year for the industry-size groups. If firms are benchmarking CEO compensation to median industry-size levels, the coefficients on the low compensation

Table 8. Asymmetry in Pay for Skill/Luck Using the Matched CEO Sample.

Matched CEOs Regression	Panel A		Panel B	
Independent Variables	Log (Compensation)		Change in log (Compensation)	
	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Skill × Pre-spinoff	0.007	1.40	0.002	0.45
Luck × Pre-spinoff	0.004	0.82	0.000	0.05
Skill × Bad skill × Pre-spinoff	−0.010	−1.30	−0.006	−0.92
Luck × Bad luck × Pre-spinoff	−0.009	−1.03	−0.001	−0.13
Skill × Post-spinoff	−0.003	−0.58	−0.005	−1.09
Luck × Post-spinoff	0.011**	2.41	0.010***	3.00
Skill × Bad skill × Post-spinoff	0.007	1.00	0.008	1.12
Luck × Bad luck × Post-spinoff	−0.020**	−2.15	−0.013**	−2.09
Other control variables	Yes		Yes	
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.361		0.152	
Number of observations	394		330	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Skill	−0.009*	−1.73	−0.007	−1.5
Luck	0.007	1.3	0.010***	2.7
Skill × Bad skill	0.016**	2.05	0.014*	1.92
Luck × Bad luck	−0.011	−1.01	−0.012**	−2.11

Notes: This table tests pay for asymmetry in pay for skill/luck in pre- and post-spinoff firms with matched CEOs. The sample includes pre- and post-spinoff firms where we were able to confirm the last CEO of the pre-spinoff firm stayed as CEO of the post-spinoff parent firm, so for this table, the CEO in the pre-spinoff firm sample is also in the post-spinoff parent firm sample. Skill is defined as the alpha from Eq. (2) and luck is the average daily excess return over the fiscal year minus skill. Multiplying by 250 annualizes both skill and luck. Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

indicator variable and the CDF compensation distance will be positively related to compensation. We follow Cremers and Grinstein (2014) and use change in log compensation as the dependent variable and also account for lagged compensation because of the positive autocorrelation of CEO compensation across time.

The results in Table 9 use the low compensation indicator and show significant use of benchmarking in both pre- and post-spinoff firms. Post-spinoff parent firms show the largest increases in compensation following a year of being below peer median compensation when looking at the full sample in Panel A. In the matched CEO sample in Panel B, pre-spinoff firms show more compensation benchmarking than post-spinoff firms. Table 10 shows significant compensation benchmarking when using the CDF of compensation distance for both pre- and post-spinoff firms. None of the differences at the bottom of Tables 9 and 10 between pre- and post-spinoff benchmarking variables is significant. The results in these tables do not support Hypothesis 6.

ROBUSTNESS

To address the concern that the results of the spinoff firms are being driven by factors other than the spinoff event, we construct and re-run the empirics on a matched sample on non-spinoff firms. To construct the matched sample, we first take the 161 firms in our spinoff sample and match them to non-spinoff firms in the same industry (Fama-French 12) with the same fiscal year end. The matched firms must have financial and return data that at least spans the years during which the spinoff firm is included in the original sample. After meeting these requirements, we choose the matched firm that is closest in size (based on revenue) to the spinoff firm at the fiscal year end during which the spinoff occurs.[8]

Next, we calculate the variables required to run the empirical tests for the matched firms over a three-year window around the spinoff year. We then match the firm-year observations of the matched sample to the firm-year observations of the spinoff sample. The final matched sample has 675 firm-year observations, which is fewer than the 729 firm-year observations in the spinoff sample. This decrease is a result of missing data in the matched sample.

Table 11 shows descriptive statistics for the matched firms. Compared to the spinoff firms in Table 2 (Panels A and B), the matched firms seem to be

Table 9. Benchmarking CEO Compensation with Low Compensation Indicator.

Independent Variables	Change in log (Compensation)	
	Coefficient	*T*-stat.
Panel A – Full Sample Regression		
Low comp ind × Pre-spinoff	0.147*	1.810
Low comp ind × Post-spinoff	0.211**	2.620
Log revenue	0.162	0.880
Book-to-market	0.002	0.030
Market beta	−0.022	−0.570
Return variance	−0.006*	−1.700
Regulation	0.077	0.340
Interlock	0.033	0.340
Tenure	−0.009	−0.240
Herfindahl	4.728	1.400
Lag log (compensation)	−0.156***	−3.9
Year and industry fixed effects	Yes	
Adjusted *R*-squared	0.116	
Number of observations	580	
Difference in pre- and post-coefficient	Difference	*T*-stat.
Low comp ind	0.064	0.72
Panel B – Matched CEOs Regression		
Low comp ind × Pre-spinoff	0.177**	2.200
Low comp ind × Post-spinoff	0.124	1.200
Log revenue	0.184	0.770
Book-to-market	0.158	1.390
Market beta	−0.043	−0.980
Return variance	−0.016**	−2.300
Regulation	−0.288	−0.850
Interlock	0.160	1.610
Tenure	−0.051	−1.240
Herfindahl	−2.150	−0.490
Lag log (compensation)	−0.157***	−2.78

Table 9. (*Continued*)

Independent Variables	Change in log (Compensation)	
	Coefficient	*T*-stat.
Year and industry fixed effects	Yes	
Adjusted *R*-squared	0.138	
Number of observations	330	
Difference in pre- and post-coefficient	Difference	*T*-stat.
Low comp ind	−0.054	−0.53

Notes: This table tests compensation benchmarking in pre- and post-spinoff parent firms. Low comp ind is an indicator variable equal to one if the firm's prior year compensation was below the median compensation of its industry-size benchmark, and zero otherwise. Panel A is the full sample, and Panel B is the matched CEO sample where the CEO in the pre-spinoff firm sample is also the CEO for the post-spinoff parent firm. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.
*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

similar with respect to log total compensation, firm size (measured by log revenue) and book-to-market. As expected, the matched firms for the post-spinoff observations are slightly larger than their spinoff sample counterparts because the matched sample firms do not divest a part of their company. Overall, the firm characteristics are similar between the spinoff sample and matched sample.

Table 12 provides the results of the RPE tests for the matched sample. Unlike the spinoff sample results in Table 3 (Panels A and B), the matched sample firms do not appear to alter their RPE use between the pre- and post-spinoff timeframe. The matched firms actually see a decrease in pay-for-performance sensitivity (PPS) in the post-spinoff period where the CEO's compensation becomes less sensitive to the firm's stock return. This decrease in PPS sharply contrasts with the results in Table 3 where the CEO's compensation becomes more sensitive to stock performance and less sensitive to industry-size performance following the spinoff. The industry-size return does not significantly affect the matched CEO's compensation in either the pre- or post-spinoff period. These results indicate that the relationship between CEO compensation and firm performance along with industry-size performance is unique to the sample of spinoff firms.

Table 10. Benchmarking CEO Compensation with CDF Measure.

Independent Variables	Change in log (Compensation)	
	Coefficient	*T*-stat.
Panel A – Full Sample Regression		
CDF comp distance × Pre-spinoff	0.723***	4.250
CDF comp distance × Post-spinoff	0.759***	4.370
Log revenue	0.156	0.850
Book-to-market	−0.032	−0.480
Market beta	−0.017	−0.430
Return variance	−0.004	−1.260
Regulation	0.205	0.920
Interlock	0.015	0.140
Tenure	−0.005	−0.140
Herfindahl	4.909	1.510
Lag log (compensation)	−0.06	−1.27
Year and industry fixed effects	Yes	
Adjusted *R*-squared	0.146	
Number of observations	580	
Difference in pre- and post-coefficient	Difference	*T*-stat.
CDF comp distance	0.036	0.34
Panel B – Matched CEOs Regression		
CDF comp distance × Pre-spinoff	0.538***	3.150
CDF comp distance × Post-spinoff	0.518***	2.780
Log revenue	0.213	0.910
Book-to-market	0.147	1.320
Market beta	−0.039	−0.890
Return variance	−0.015**	−2.000
Regulation	−0.173	−0.540
Interlock	0.128	1.210
Tenure	−0.042	−1.020
Herfindahl	−1.732	−0.410
Lag log (compensation)	−0.089	−1.51
Year and industry fixed effects	Yes	

Table 10. (*Continued*)

Independent Variables	Change in log (Compensation)	
	Coefficient	*T*-stat.
Adjusted *R*-squared	0.155	
Number of observations	330	
Difference in pre- and post-coefficient	Difference	*T*-stat.
CDF comp distance	−0.02	−0.16

Notes: This table tests compensation benchmarking in pre- and post-spinoff parent firms. CDF comp distance is the cumulative distribution function of the prior year median total compensation from the industry-size group minus the prior year total compensation of the firm in the same industry-size group. CDF comp distance is low if the prior year compensation was low relative to the median industry-size compensation. Panel A is the full sample, and Panel B is the matched CEO sample where the CEO in the pre-spinoff firm sample is also the CEO for the post-spinoff parent firm. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

CONCLUSIONS

This study examines the use of relative performance evaluation (RPE), asymmetric pay for luck, and compensation benchmarking for a sample of firms that have completed a spinoff. These compensation practices have been debated in the academic literature and in the popular press. Spinoffs allow for a unique setting in which to examine these practices because spinoffs affect firm characteristics that impact the use of these practices. By examining how these compensation practices differ before and after the spinoff, we gain new insight on the practices.

The results show that pre-spinoff firms do not use RPE. Pre-spinoff CEO compensation is significantly related to the performance of an industry-size peer group and not related to firm performance. Following the spinoff, the same set of firms use RPE, and CEO compensation is more closely tied to firm performance and shielded from industry-size performance. A possible explanation for the increased use of RPE in the post-spinoff sample is that performance peer groups are easier to identify following the spinoff. The descriptive statistics show that firm returns are more closely associated with the industry-size peer returns in

Table 11. Matched Sample Descriptive Statistics.

Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Panel A: Pre-Spinoff Matched Firms						
Log total compensation	334	8.10	8.10	1.03	0.12	0.166
Firm stock return	334	0.18	0.12	0.43	0.23	0.204
Peer return (industry-size)	334	0.13	0.12	0.26	0.33	0.513
Peer return (industry)	334	0.16	0.14	0.32	0.81	0.265
Luck	334	13.99	13.19	25.55	0.59	0.908
Skill	334	0.79	0.52	31.62	0.64	0.419
Bad luck	334	0.22	0	0.41	0.03	0.026
Bad skill	334	0.49	0	0.50	0.42	0.419
Compensation distance	270	(1768.23)	(330.53)	5278.03	0.77	0.866
Low compensation indicator	270	0.39	0	0.49	0.59	0.589
CDF compensation distance	270	0.48	0.43	0.28	0.82	0.498
Market beta	334	1.02	0.98	0.57	0.40	0.672
Return variance	334	6.94	4.09	8.46	0.06	0.098
Idiosyncratic variance	334	1.91	1.64	1	0.77	0.97
Log revenue	334	7.98	8.09	1.37	0.08	0.564
Book-to-market	334	0.60	0.47	0.57	0.32	0.672
Regulation	334	0.04	0	0.19	0.89	0.888
Interlock	334	0.06	0	0.24	0.02	0.018
Tenure	313	7.59	7.69	0.97	0.01	0.015
Herfindahl	334	0.04	0.03	0.04	0.70	0.024
Panel B: Post-Spinoff Matched Firms						
Log total compensation	340	8.22	8.26	0.93	0.12	0.17
Firm stock return	341	0.14	0.08	0.46	0.23	0.20
Peer return (industry-size)	341	0.11	0.11	0.29	0.33	0.51
Peer return (industry)	341	0.17	0.13	0.39	0.81	0.27
Luck	341	12.85	13.85	28.57	0.59	0.91
Skill	341	(0.32)	(0.98)	28.95	0.64	0.42
Bad luck	341	0.29	0	0.46	0.03	0.03

Table 11. (*Continued*)

Variable	*N*	Mean	Median	Std. Dev.	Test Statistic for Pre- versus Post-Spinoff Differences in the	
					Mean (*p*-value)	Median (*p*-value)
Bad skill	341	0.52	1.00	0.50	0.42	0.42
Compensation distance	292	(1908.07)	(385.42)	5868.33	0.77	0.87
Low compensation indicator	292	0.41	0.00	0.49	0.59	0.59
CDF compensation distance	292	0.48	0.45	0.28	0.82	0.50
Market beta	341	1.06	1.00	0.57	0.40	0.67
Return variance	341	8.25	4.71	9.64	0.06	0.10
Idiosyncratic variance	341	1.88	1.64	1.03	0.77	0.97
Log revenue	341	8.17	8.23	1.36	0.08	0.56
Book-to-market	341	0.64	0.48	0.60	0.32	0.67
Regulation	341	0.04	0	0.20	0.89	0.89
Interlock	341	0.02	0	0.15	0.02	0.02
Tenure	333	7.39	7.46	0.93	0.01	0.02
Herfindahl	341	0.04	0.03	0.04	0.70	0.02

Notes: Panel A provides summary statistics on the pre-spinoff matched sample. Panel B details post-spinoff matched firms. Compensation data are denominated in thousands of constant 1992 dollars. Financial data are denominated in millions of constant 1992 dollars. Variable definitions are in appendix.

the post-spinoff sample than the pre-spinoff sample. Another possibility is that decreases in information asymmetry contribute to the increase in RPE for post-spinoff firms. However, in contrast to Krishnaswami and Subramaniam (1999), we find that information asymmetry (measured by idiosyncratic variance) increases following the spinoff. These results are also robust to alternative explanations such as time effects influencing the relation between CEO compensation and firm/benchmark performance.

Pre-spinoff CEO compensation is not significantly affected by good or bad skill/luck. Post-spinoff CEOs are rewarded for good luck and not punished for bad luck. This result is robust to a sample of firms where the pre-spinoff CEO continued on to be the post-spinoff CEO. Given the findings on RPE, this result is puzzling. If RPE use increases for post-spinoff firms, then it is reasonable to expect that CEO compensation is less affected by

Table 12. Matched Sample RPE Tests.

Matched Sample Regression	Panel A		Panel B	
Independent Variables	Log (Compensation)		Change in log (Compensation)	
	Coefficient	*T*-stat.	Coefficient	*T*-stat.
Firm stock return × Pre-spinoff	0.446***	3.31	0.357***	2.71
Peer return (industry-size) × Pre-spinoff	−0.176	−0.88	−0.014	−0.07
Firm stock return × Post-spinoff	0.036	0.39	0.088	0.72
Peer return (industry-size) × Post-spinoff	−0.3	−1.64	−0.272	−1.31
Log revenue	0.462***	12.83	0.000**	2.26
Book-to-market	−0.295***	−3.03	0.086*	1.86
Market beta	0.558***	5.98	0.127	1.48
Return variance	−0.01	−1.44	−0.012***	−2.8
Regulation	−0.044	−0.13	0.059	0.25
Interlock	−0.035	−0.16	0.024	0.18
Tenure	0.061*	1.85	0.035	0.77
Herfindahl	8.997**	2.45	−0.256	−0.08
Lag log (compensation)			−0.274***	−6.49
Year and industry fixed effects	Yes		Yes	
Adjusted *R*-squared	0.528		0.208	
Number of observations	646		535	
Difference in pre- and post-coefficient	Difference	*T*-stat.	Difference	*T*-stat.
Firm stock return	−0.176	−0.88	−0.014	−0.07
Peer return (industry-size)	−0.124	−0.58	−0.272	−1.31
Pre-spinoff RPE test *p*-value	0.108		0.031	
Post-spinoff RPE test *p*-value	0.131		0.335	

Notes: This table tests RPE use for pre- and post-spinoff matched firms using Eq. (1). Panel A uses log (total compensation) as the dependent variable and Panel B uses the change in log (total compensation) as the dependent variable. Variables are defined in appendix. All dollar values are in thousands (for compensation) or millions (for financial) of constant 1992 dollars. Hetereoskedasticity-consistent *t*-statistics clustered at the firm level are reported by each coefficient.

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively.

exogenous forces (luck) and more affected by skill. Future work is needed to clarify the relation between RPE and asymmetry in pay for skill/luck.

The last set of empirical tests show significant use of compensation benchmarking for both pre- and post-spinoff firms. However, the amount of benchmarking is not significantly different between the two groups. The paper's main result provides evidence that difficulty in forming a performance benchmark inhibits the use of RPE. We also document changes in asymmetrical pay for luck between pre- and post-spinoff firms but more work is needed to better understand these results and how they relate to RPE.

NOTES

1. We can also compare compensation practices of pre-spinoff parent firms to post-spinoff subsidiary firms. This comparison is not as relevant though because the post-spinoff subsidiary firm generally cuts ties with the pre-spinoff parent firm. For example, the pre-spinoff parent CEO rarely becomes the post-spinoff subsidiary CEO. The pre-spinoff directors are also more likely to stay with the post-spinoff parent firm (70%) instead of joining the subsidiary firm (20%). Denis et al. (2012) provide more details in Tables 3 and 5.

2. In untabulated results, 62% of the matched parent-subsidiary pairs in our sample are in different industries (2-digit SIC code).

3. Accounting measures can also be used as performance benchmarks. Sloan (1993) argues earnings measures in compensation contracts filter out noise contained in stock prices and can act as a substitute to RPE. However, Gong et al. (2011) document 74% of firms that explicitly state using RPE in their 2006 S&P 1500 sample used stock returns as the performance metric.

4. The CEO could have an increased incentive for high pay-for-performance contracts if she knew a spinoff was likely to occur and the contracts would not become valuable until after the spinoff was completed.

5. All factor returns were obtained from Kenneth French's data library, http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

6. These measures are not common for measuring skill and luck in the compensation literature. We use them because they only require data available at the time compensation is set (end of fiscal year), and we do not have to run an annual pooled regression that includes pre- and post-spinoff observations for the same firm.

7. We use five size groups because we are using 12 industry groups. Prior studies commonly use two size groups but have more industry definitions (SIC 2-digit or Fama-French 48 industries). Our goal in using five size groups is to have the number of firms in the industry-size benchmark compensation groups be comparable to previous studies.

8. We also used a two-step matching process of matching on size and book-to-market. This process cut the number of matched firms we were able to produce so we favor matching on size alone. However, the empirical results from the two-step matching process are qualitatively similar to the results of the size-matched sample.

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APPENDIX A: VARIABLE DEFINITIONS

Total compensation: Item TDC1 from ExecuComp, defined as the sum of salary, bonus, other annual compensation, long-term incentive payouts, other cash payouts, and the value of restricted stock and stock options granted (using Black-Scholes). Denominated in thousands of constant 1992 dollars.

Firm stock return: Stock return for the spinoff firm with dividends reinvested calculated over the entire fiscal year.

Peer return (industry-size): Fiscal-year return (dividends reinvested) for the equally weighted portfolio of peer firms in the same Fama-French 12 industry and size quartile, excluding the spinoff-firm stock return.

Peer return (industry): Fiscal-year return (dividends reinvested) for the equally weighted portfolio of peer firms in the same Fama-French 12 industry, excluding the spinoff-firm stock return.

S&P 500 return: Fiscal-year return for the S&P 500 (dividends reinvested).

Skill: The intercept (alpha) from regressing daily excess firm stock returns on the daily Fama-French and momentum factors over the fiscal year during which the compensation occurs. To account for nonsynchronous trading, we also include one lag factor return for each factor similar to Lewellen and Nagel (2006). Multiplying by 250 annualizes skill.

Luck: The average daily excess return over the fiscal year minus skill. Multiplying by 250 annualizes luck.

Bad skill/*Bad luck*: Indicator variable that is equal to one when skill/luck is negative and zero otherwise.

Compensation distance: The prior year median total compensation from the industry-size group (Fama-French 12 industries, 5 size groups based on market capitalization) minus the prior year total compensation of the firm in the same industry-size group.

Low compensation indicator: Indicator variable that is equal to one when compensation distance is positive and zero otherwise.

CDF compensation distance: Cumulative distribution function (CDF) of compensation distance calculated each year for each industry-size group used to calculate compensation distance.

Market beta: The sum of the coefficients on the market excess return and lag market excess return from a regression of daily firm excess returns on the daily Fama-French factors, momentum factor and one lag for each factor. The regressions use daily return data over the entire fiscal year.

Return variance: The variance of the daily firm stock returns (in %) over the entire fiscal year.

Idiosyncratic variance: The variance of the residuals from regression Eq. (2).

Log revenue: Natural logarithm of the one-year lagged revenue. Revenue is denominated in millions of constant 1992 dollars. In regressions where the dependent variable is change in log compensation, log revenue is defined as the change in log revenue.

Book-to-market: Ratio of book value to market value of equity. Data definitions follow Daniel and Titman (2006) and portion of code was used from the SIZE_BM sample program provided by Wharton Research Data Services (WRDS). In regressions where the dependent variable is change in log compensation, book-to-market is defined as the change in book-to-market.

Regulation: Indicator variable that takes a value of one if the firm is in the utilities industry (SIC code between 4900 and 4949) and zero otherwise.

Interlock: Indicator variable that takes a value of one if the CEO is involved in an interlock relationship that requires disclosure in the proxy statement and zero otherwise.

Tenure: The natural logarithm of the number of days the CEO has been in office as of each fiscal year end.

Herfindahl: The sum of the squared market share of all firms in the same Fama-French 12 industry for a given fiscal year. Market share is defined as firm-revenue divided by industry revenue.

Divisions: The number of SIC codes listed for the pre-spinoff parent in SDC variable Target Ultimate Parent SIC. A separate SIC code is assigned to each line of business in which the pre-spinoff company is involved.

Salary, Bonus, and Other compensation: ExecuComp items SALARY, BONUS, and OTHANN, respectively.

Stock grants: ExecuComp item OPTION_AWARDS_BLK_VALUE if OLD_DATAFMT_FLAG = 1, OPTION_AWARDS_FV if OLD_DATAFMT_FLAG = 0.

Option awards: ExecuComp item RSTKGRNT if OLD_DATAFMT_FLAG = 1, STOCK_AWARDS_FV if OLD_DATAFMT_FLAG = 0.

SOCIO-PSYCHOLOGICAL MOTIVES OF SOCIALLY RESPONSIBLE INVESTORS

Julia M. Puaschunder

ABSTRACT

The 2008/2009 World Financial Crisis underlined the importance of social responsibility for the sustainable functioning of economic markets. Heralding an age of novel heterodox economic thinking, the call for integrating social facets into mainstream economic models has reached unprecedented momentum. Financial Social Responsibility bridges the finance world with society in socially conscientious investments. Socially Responsible Investment (SRI) integrates corporate social responsibility in investment choices. In the aftermath of the 2008/2009 World Financial Crisis, SRI is an idea whose time has come. Socially conscientious asset allocation styles add to expected yield and volatility of securities social, environmental, and institutional considerations. In screenings, shareholder advocacy, community investing, social venture capital funding and political divestiture, socially conscientious investors hone their interest to align financial profit maximization strategies with social

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concerns. In a long history of classic finance theory having blacked out moral and ethical considerations of investment decision making, our knowledge of socio-economic motives for SRI is limited. Apart from economic profitability calculus and strategic leadership advantages, this paper sheds light on socio-psychological motives underlying SRI. Altruism, need for innovation and entrepreneurial zest alongside utility derived from social status enhancement prospects and transparency may steer investors' social conscientiousness. Self-enhancement and social expression of future-oriented SRI options may supplement profit maximization goals. Theoretically introducing potential SRI motives serves as a first step toward an empirical validation of Financial Social Responsibility to improve the interplay of financial markets and the real economy. The pursuit of crisis-robust and sustainable financial markets through strengthened Financial Social Responsibility targets at creating lasting societal value for this generation and the following.

Keywords: Behavioral economics; corporate social responsibility; financial social responsibility; socio-economics; socially responsible investment; socio-psychological motives

INTRODUCTION

We live in the "Age of Responsibility." In the aftermath of the 2008/2009 World Financial Crisis, the societal call for responsible market behavior has reached unprecedented momentum. Responsibility is part of the human nature and complements corporate activities and financial considerations. The economic, legal, social, and philanthropic responsibilities of the corporate sector are attributed in Corporate Social Responsibility (CSR). Financial Social Responsibility is foremost addressed by Socially Responsible Investment (SRI). Globalization, political changes and societal trends, but also the current state of the world economy, have leveraged a societal demand for ingraining responsibility into market systems.

Our time has been referred to as the "Age of Responsibility" in US president Barack Obama's inauguration speech on January 21, 2009 (*Washington Post*, January 21, 2009). In the wake of the 2008 financial crisis, Obama called for a new spirit of responsibility that serves the greater goals of society. According to World Bank President Robert Zoellick the "new era of

responsibility" features "changed attitudes and co-operative policies" steering responsible corporate conduct and socially responsible investment as means of societal progress (*Financial Times*, January 25, 2009).

Apart from governmentally enacted social responsibility of financial markets, human social responsibility emerged in modern economies in the wake of globalization, political and societal trends. In recent decades, multinational corporate conduct exhibited heightened levels of responsibility vis-à-vis society. Having gained in economic weight and political power, the majority of corporations tapped into improving the societal conditions by contributing to a wide range of social needs beyond the mere fulfillment of shareholder obligations and customer demands (De Silva & Amerasinghe, 2004; Kettl, 2006). Global players stepped in where traditional governments refrained from social service provision – foremost through privatization or welfare reforms. International corporations also filled opening governance gaps when governments could not administer or enforce citizenship rights, new regulations were politically not desirable, feasible or even when governments had failed to provide social services (Steurer, 2010). By striving to meet citizenship goals, corporate executives integrated responsibility into ethical leadership that served multiple stakeholders in balancing economic goals with societal demands (DeThomasis & St. Anthony, 2006).

Today CSR has leveraged into a pivotal factor to align profit maximization with concern for societal well-being and environmental sustainability. Corporations contribute to social causes beyond mere economic and legal obligations (Elkington, 1998; Lea, 2002; Livesey, 2002; Matten & Crane, 2005; Wolff, 2002). Nowadays almost all corporations have embedded social responsibility in their codes of conduct, introduced CSR in their stakeholder relations and incorporated social conscientious practices in their management (Crane, Matten, & Moon, 2004; Werther & Chandler, 2006). The emergence of CSR as a corporate mainstream is accompanied by CSR oversight by stakeholders advocating for corporate social conduct (Reinhardt, Stavins, & Vietor, 2008). By ingraining economic, legal, ethical, and societal aspects into corporate conduct, CSR attributes the greater goal of enhancing the overall quality of life for this generation and the following (Carroll, 1979).

In line with these trends, CSR has become an *en vogue* topic in academia. Academics challenge Milton Friedman's proclamation of profit maximization as the primary intention for business activities and investigate innovative public-private partnerships (PPPs) to contribute to social welfare (Moon, Crane, & Matten, 2003; Nelson, 2004; Prahalad & Hammond, 2003). Under the guidance of international organizations, CSR developed

into a means of global governance social service provision in innovative PPPs that tackle social deficiencies in the private sector.

Concurrent with corporations having started to pay attention to social responsibility, ethical considerations have become part of the finance world. Developing an interest in corporate social conduct, conscientious investors nowadays fund socially responsible corporations (Ahmad, 2008; Sparkes, 2002; *The Wall Street Journal*, August 21, 2008). In SRI securities are not only selected for their expected yield and volatility, but also for social, environmental and institutional aspects. In the special case of political divestiture, socially responsible investors refrain from contributing to politically incorrect market regimes. With trends predicting continuing globalization, corporate conduct disclosure and societal crises beyond the control of single nation states, the demand for corporate social responsibilities is believed to continuously rise (Beck, 1998; Bekefi, 2006; Fitzgerald & Cormack, 2007; Livesey, 2002; Scholte, 2000).

In the aftermath of the 2008/2009 World Financial Crisis, SRI has become a prominent term (*The Wall Street Journal*, August 21, 2008; *The Economist*, January 17, 2008). With ongoing "Occupy" movements around the world, the call for responsibility within corporate and financial markets has reached unprecedented momentum. Mainstream economic theories are challenged for having been preoccupied with demonstrating how markets are largely efficient, unregulated market forces working toward the best interest of the single market participant and the collective of societal constituents (Stiglitz, 2003). Financial crises theories have largely ignored socio-psychological notions of economic systems and socio-psychological facets of market participants (Soros, 2008). To avert a recurrent financial disaster in the future, a heterodox investigation of social responsibility of market actors is demanded by political and financial leaders. As for gaining an accurate understanding of economic markets, future research must widen the interdisciplinary lens and consider socio-psychological motives in corporate, economic, and financial theories and models.

Gaining insight on the socio-psychological roots of Financial Social Responsibility could help delineating circumstances under which social responsibility is likely to occur, yet also grant insights on how to steer social conscientiousness in private sector markets. Unraveling socio-psychological triggers for financial social conscientiousness within corporate and financial markets provides an opportunity to foster a harmonious interplay of financial markets and real market economies.

As a first step in this direction, the following piece theoretically explores potential socio-psychological motives of socially responsible market actors.

The paper opens with describing SRI in order to propose a theoretical framework of socio-psychological SRI motives including personal and social needs that may complement rational profit maximization endeavors and leadership advantages. Utility derived from altruism, innovation, transparency and social status prospects in the wake of ethicality are introduced as potential SRI drivers. In addition, self-enhancement and social expression of future-oriented SRI options may supplement profit maximization goals. Conclusions aid the ongoing adaptation and adoption of SRI with a special attention to the interplay of public and private contributions. In sum, this paper explores innovative ways in which financial markets create value for society by the successful implementation of Financial Social Responsibility fostering the overarching goal of improving the living conditions for this generation and the following.

SOCIALLY RESPONSIBLE INVESTMENT (SRI)

Today social responsibility has emerged into an *en vogue* topic for the corporate world and the finance sector. Contrary to classic finance theory that attributes investments to be primarily based on expected utility and volatility, the consideration of social responsibility in financial investment decisions has gained unprecedented momentum (*The Economist*, January 17, 2008; *The Wall Street Journal*, August 21, 2008).

Financial Social Responsibility is foremost addressed in SRI, which integrates personal values and social concerns into financial investments (Schueth, 2003). SRI is an asset allocation style, by which securities are not only selected on the basis of profit return and risk probabilities, but foremost in regards to social and environmental contributions of the issuing entities (Beltratti, 2003; Williams, 2005).

Socially responsible investors allocate financial resources based on profit maximization goals as well as societal implications. Pursuing economic and social value maximization alike, socially responsible investors incorporate CSR into financial decision making (Renneboog, Horst, & Zhang, 2007; Schueth, 2003; Steurer, Margula, & Martinuzzi, 2008). Socially conscientious investors fund socially responsible corporations based on evaluations of the CSR performance as well as social and environmental risks of corporate conduct. Thereby SRI becomes an investment philosophy that combines profit maximization with intrinsic and social values (Ahmad, 2008; Livesey, 2002; Matten & Crane, 2005; Wolff, 2002). SRI allows the pursuit of financial goals

while catalyzing positive change in the corporate, finance, and political arena (Mohr, Webb, & Harris, 2001; Schueth, 2003).

As of today, SRI accounts for an emerging multi-stakeholder phenomenon with multi-faceted expressions. SRI features various forms and foci to align financial considerations with ethical, moral, and social endeavors. Contemporary SRI practices comprise socially responsible screenings, shareholder advocacy, community investing, and social venture capital funding (Steurer et al., 2008). Screenings integrate the evaluation of corporate financial and social performances into portfolio selections. Positive screenings target at corporations with sound social and environmental responsibility. Negative screenings exclude entities featuring morally and ethically irresponsible corporate conduct. Shareholder advocacy is the active engagement of shareholders in the corporate management by voting, activism, and dialogue. The majority of shareholders exercise their voting rights by proxy resolutions, in which a third party has the right to advocate for the shareholders before the corporate board. Negative shareholder activism comprises political lobbying, consumer boycotts, stakeholder confrontation, and negative publicity. In the case of political divestiture, socially responsible investors use their market power to attribute global governance goals. By foreign direct investment flows, SRI relocates capital with the greater goal of advancing international political development (Schueth, 2003; Starr, 2008). Community investing describes ear-marks of investment funds for community development, but also features access to financial products and services to un(der)served communities. Social venture capital supports pro-social start-ups and social entrepreneurs for the greater goal of increasing the social impact of financial markets.

The various SRI expression forms leverage Financial Social Responsibility into a multi-stakeholder phenomenon. By combining social, environmental, and financial aspects in investment options, SRI encompasses a broad variety of stakeholder interests (Dupré, Girerd-Potin, & Kassoua, 2008; Harvey, 2008; Steurer, 2010). Building the relationship between the financial world and society, SRI embraces multiple stakeholders ranging from *economic* (e.g., institutional and private investors), *organizational* (e.g., labor union representatives, banking executives, fiduciaries) and *societal* (e.g., representatives of international organizations and nongovernmental organizations, governmental officials, public servants, nonprofits, media representatives, academics) actors.

The broad variety of SRI stakeholders can be explained by the history of Financial Social Responsibility (McCann, Solomon, & Solomon, 2003; Solomon, Solomon, & Norton, 2002; Sparkes, 2002). As SRI options have

increased in size, number, and scope in the wake of a qualitative and quantitative growth in the Western World within recent decades, SRI emerged into an investment philosophy adopted by a growing proportion of financial practitioners (McCann et al., 2003; Solomon et al., 2002; Sparkes, 2002). Over the last 10 years, assets involved in social investing have risen 4 percent faster than all professionally managed investment options in the US accounting for US$ 2.5 trillion or 20.7 percent of the US market in 2005 (Social Investment Forum Report, 2006). The rise in SRI is accompanied by the upcoming of stock exchange rating agencies, social responsibility impact measurement tools, social reporting, and certifications.

Today the range of shareholder engagement possibilities is more sophisticated than ever and trends forecast a further maturation of SRI. The SRI market has reached unprecedented diversity featuring a wide range of multi-faceted SRI activities and a variety of stakeholder engagement possibilities. Financial Social Responsibility comprises commercial SRI retail to the public in socially screened separate accounts, mutual and pension funds, bonds and community development as well as hybrid instruments that undergo financial and ethical value tests (Mathieu, 2000; Rosen, Sandler, & Shani, 1991; Sparkes & Cowton, 2004). The establishment and advancement of SRI retail and the adoption of SRI by major institutional investors have matured SRI from a margin to a more mainstreamed asset allocation style (Mathieu, 2000; Rosen et al., 1991; Sparkes & Cowton, 2004). SRI has been adopted by a growing proportion of investors around the world. The incorporation of social, environmental, and global governance factors into investment options has increasingly become an element of fiduciary duty, particularly for investors with long-term horizons that oversee international portfolios.

The ascent SRI has been accompanied by a change in the qualitative nature of social investments. The current SRI notion is very different from the earlier "ethical investment" based on negative screenings (McCann et al., 2003). Although a moral touch remains, the establishment of SRI retail funds and the adoption of SRI by institutional investors have turned SRI into a pro-active positive screening option. The growth of Financial Social Responsibility expressions has transformed SRI into an investment philosophy adopted by a growing proportion of investment firms and governmental agencies around the world (Knoll, 2008; Mohr et al., 2001; Sparkes & Cowton, 2004). The sophistication of socially responsible shareholder engagement has triggered an upcoming of social and environmental stock exchange rating agencies, SRI impact measurement tools, corporate social and environmental reporting and certifications on social, ethical, and

environmental corporate performance (Steurer et al., 2008). This trend goes hand in hand with business professionals and analysts monitoring as well as academia documenting Financial Social Responsibility.

As of today social responsibility has emerged into an *en vogue* topic for corporate executives, governmental officials, international public servants and stakeholder representatives. Due to globalization, worldwide business mergers, but also as for international deficiencies beyond the scope of nation states; the call for CSR and SRI has reached unprecedented momentum (Ahmad, 2008; Beck, 1998; Levitt, 1983; Livesey, 2002; Scholte, 2000). In the wake of the 2008/2009 World Financial Crisis, corporate social misconduct and financial fraud have steered consumers and investors to increasingly pay attention to democracy and social responsibility within market systems (Roberts, 2010). Current stakeholder pressure addresses social responsibility of market actors and information disclosure of corporate and financial conduct. Legislative reforms enhance the accountability of financial market operations. With the era of liberalization being halted by the 2008 financial meltdown, the reinterpretation of the public-private sector roles in providing social services has leveraged social responsibility into a pressing debate. The renaissance of attention to responsibility as a prerequisite for the functioning of economic systems lets SRI appear as windows of opportunity to re-establish trust in fallible market systems (Little, 2008; Livesey, 2002; Matten & Crane, 2005; Trevino & Nelson, 2004). The current drive toward transparency and accountability of financial markets perpetuates the idea of financial social conscientiousness. For the future, economists and trend analysts attribute the emergence of SRI the potential to lift entire market industries onto a more socially conscientious level if the majority of Investors become socially responsible.

Given the current demand for social responsibility within market systems, the common knowledge on SRI is fairly limited. Empirical studies on SRI are rare with the current body of research primarily targeting at efficiency and financial correlates of SRI. While market studies foremost focus on economic fundamentals, the knowledge of socio-psychological components of socially responsible financial decision making remains scarce. The writings about socially responsible Investors address demographic variables and lifestyle factors, but neglect socio-psychological motives. Mild attention has been paid to socio-psychological foundations of SRI given the potential of Financial Social Responsibility to support and advocate for a sustainable market economy. In addition, until today the contributing drivers of SRI and success factors of Financial Social Responsibility are unexplained.

In the light of the current uprising of Financial Social Responsibility, the following paper will therefore explore potential socio-psychological SRI motives of socially conscientious investors to complement classic finance theories. As a first step toward a unified Financial Social Responsibility approach, a preliminary SRI framework will be presented to delineate potential circumstances under which SRI is likely to occur and by which financial social conduct could be triggered. The theoretical framework will introduce social and psychological factors contributing to financial social conscientiousness.

Being knowledgeable about SRI motives has manifold advantages. Overall describing SRI helps resolving societal losses imbued in the novelty, complexity, and ambiguity of Financial Social Responsibility. Evaluating up-to-date research on financial social consideration will increase the effectiveness of Financial Social Responsibility and allow promoting SRI to the finance community. Information on socio-psychological motives of socially responsible investors will also add behavioral insights to classic financial market theories. Potentially underlying SRI causes and triggers will be presented to become empirically tested in behavioral economics research on Financial Social Responsibility. Gaining a more sophisticated understanding of Financial Social Responsibility will help finding repeatable patterns and crafting policies to trigger SRI within financial markets and thus foster a more effective social responsibility implementation. In particular, depicting socio-psychological SRI factors may help delineating triggers and impacting success factors for SRI.

Overall, the research is targeted at unraveling the dynamics of social responsibility to increase social conscientiousness of the finance world. Engaging in the current discussion about Financial Social Responsibility will allow predicting future global Trends in order to aid a productive interplay of public and private sector forces in building financial market social conscientiousness. Research on SRI in the aftermath of the 2008/2009 World Financial Crisis will help understanding SRI as a means to re-establish trust in financial global governance to ensure financial market stability as a prerequisite for sustainable market economies and future guarantee of societal progress. Contributing to a successful rise of social responsibility within modern market economies is aimed at SRI becoming a mainstream feature of financial decision making serving the greater goal of fostering positive societal change.

SRI FRAMEWORK

Traditional financial market theory holds investment decisions being based on rationality (Baron, 2000; Carswell, 2002; Michelson, Wailes,

van der Laan, & Frost, 2004). Classical portfolio theory depicts investment allocations dependent on profit maximization of expected utility and volatility (Dupré et al., 2008; Harvey, 2008). The recent boom in socially responsible investment options and also the heightened attention to Financial Social Responsibility in the aftermath of the 2008/2009 financial meltdown have leveraged the demand to understand irrational socio-psychological motives of investment behavior to unprecedented momentum (Beltratti, 2003). With the current body of SRI studies focusing on the supply side and financial performance, scarce is the understanding of socio-psychological motives for SRI (Brenner, 2001; Cuesta de la & Valor, 2007; Mohr et al., 2001).

In first attempts to analyze the reasons for socially responsible market behavior, demographic correlates revealed socially responsible investors to be well-educated, young and more likely to be female (Hayes, 2001; Rosen et al., 1991; Sparkes, 2002). Socially responsible investors are described as perfectionists who are likely to serve in caring professions such as medicine, education, or social work (Tippet, 2001; Tippet & Leung, 2001).

As for investment distributions, 80 percent of socially responsible investors have mixed portfolios and only 20 percent exclusively hold onto SRI options (Dupré et al., 2008). No significant levels of materialism, risk propensity, and investment performance concerns are found for socially responsible investors, who tend to believe that SRI implies lower returns than ordinary market options (Sparkes, 2002).

First exploratory anecdotal evidence on socio-psychological motives of SRI leads to a diverse and nonstringent picture: A survey of over 1,100 individual investors showed correlations between SRI and socio-psychological lifestyle factors such as post-materialism, self-image enhancement, and social attitudes (Lewis, 2001 in Sparkes, 2002; Rosen et al., 1991). Socially responsible investors are described as liberal pro-environmentalist who are open to exotic cultures. As idealistic altruists, socially conscientious investors are less likely to be self-centered and hold onto traditional gender roles, religious and moral values (O'Neil & Pienta, 1994; Ray & Anderson, 2000; Sproles, 1985; Sproles & Kendall, 1986).

Investors potentially consider SRI for economic, psychological, and social reasons. SRI grants multi-faceted utilities to investors – some of them rational, others less in sync with classic homo economicus assumptions. Monetary gratification may very likely be accompanied by socio-psychological values and human-imbued wishes for common goals compliance (Waldman, Siegel, & Javidian, 2004). The underlying socio-psychological motives for investors exhibiting social responsibility and integrating ethicality in their portfolio choice are yet opaque. As classic finance theories have blacked out

moral and ethical dimensions, a descriptive framework for Financial Social Responsibility has yet to be built (Dupré et al., 2008). In a first attempt to shed light on socio-psychological SRI facets, the following investor motives are proposed and described in detail in the following:

(1) The intention to maximize profits
(2) Altruism as the concern for the societal well-being
(3) Need for innovation and entrepreneurship
(4) Strategic leadership advantages through social status elevation
(5) Utility derived from transparency and information disclosure
(6) Self-enhancement through identification and self-consistency
(7) Expression of social values
(8) Long-term considerations

THE INTENTION TO MAXIMIZE PROFITS

Empirical investigations of the relationship between SRI and profitability offer no generalizable pattern (Butz, 2003; Hamilton, Hoje, & Statman, 1993; McWilliams & Siegel, 2000). Up to date no stringent answer on the performance of SRI in relation to the overall market has been identified (Dixon, 2002; Jones, van der Laan, Frost, & Loftus, 2008; Little, 2008; Mackey, Mackey, & Barney, 2004). While some evidence holds SRI out- (Kempf & Osthoff, 2007), others underperforming the market (Fowler & Hope, 2007) and some studies report no difference of SRI to conventional market indices at all (Abramson & Chung, 2000; Boutin-Dufresne & Savaria, 2004).

For instance, since 1992 the Domini 400 Social Index has outperformed the S&P 500 (Harvey, 2008). Data of the 100 "Best Corporate Citizens" corporations underlined the SRI profitability to outperform the Standard & Poor's 500 Index (S&P 500) – an index of 500 widely held stocks to measure the general market performance (Kotler & Lee, 2005). In addition, a pool of 277 corporations listed at the Toronto Stock Exchange exhibited a positive relation of social responsibility, positive financial return and low volatility from 1996 to 1999. Sector-specific investigations related corporate environmental responsibility to higher risk-adjusted returns (Cohen, Fenn, & Konar, 1997; Posnikoff, 1997).

In contrast, stocks of 451 UK corporations with sound social performance were depicted to significantly underperform, while corporations with low corporate social performance to considerably outperform the market (Brammer, Brooks, & Pavelin, 2006). Within the Australian market, ethical

funds were significantly undervalued in the market from 2002 to 2005 (Jones et al., 2008). In sync, McWilliams, Siegel, and Teoh (1999), Meznar, Nigh, and Kwok (1994), Ngassam (1992) as well as Wright and Ferris (1997) reported political divestiture to be associated with shareholder wealth loss.

No difference in the financial performance or volatility rates of SRI to the rest of the market was identified by Abramson and Chung (2000) as well as Boutin-Dufresne and Savaria (2004).

In closing, there is no stringent answer as to whether SRI is associated with an increase or decrease in shareholder return and volatility (Berman, Wicks, Kotha, & Jones, 1999). Sometimes socially responsible financial market options increase shareholder value, in some cases SRI reduces shareholder profits and sometimes SRI does not deviate from ordinary financial options (Hamilton et al., 1993; Maux & Saout, 2004).

The inconsistency of findings is attributed to manifold SRI expression forms and measurement deficiencies. Positively screened SRI funds – that more likely feature IT-technology and alternative energy industries attracting innovative venture capital – tend to be more volatile, yet if successful, grant high profitability – for example, solar energy funds have significantly outperformed the market in recent years and remained relatively stable during the 2008/2009 World Financial Crisis.

As for excluding high-return, high-volatility industries such as petroleum, defense and addictive substances, negatively screened options are more likely to underperform in the market. At the same time negative screened market options are robust to overall market changes. Negative screening asset holders are more loyal to their choice in times of crises, which contributes to the stability of these options. Data on the profitability of political divestiture indicates a potential first-mover advantage for early divestiture.

In a cost and benefit analysis, SRI implies short-term expenditures, but grants long-term sustainable investment streams. In the short run, screened funds have a higher expense ratio in comparison to unscreened ones – that is social responsibility imposes an instantaneous "ethical penalty" of decreased immediate shareholder revenue (Mohr & Webb, 2005; Tippet, 2001). In addition, searching for information and learning about CSR is associated with cognitive costs. Screening requires an extra analytical decision-making step – especially positive screens are believed to be more cognitively intensive than negative ones (Little, 2008). In addition, screening out financial options lowers the degrees of freedom of a full-choice market spectrum and risk diversification possibilities (Biller, 2007; Mohr & Webb, 2005; Williams, 2005).

On the long run, however, SRI options offer higher stability, lower turnover, and failure rates compared to general assets (Dhrymes, 1998; Geczy, Stambaugh, & Levin, 2003; Guenster, Derwall, Bauer, & Koedijk, 2005; Schroeder, 2003; Stone, Guerard, Gületkin, & Adams, 2001). Being based on more elaborate decision making, once investors have made their socially responsible decision, they are more likely to stay with their choice (Little, 2008). As a matter of fact, SRI options are less volatile and more robust regarding cyclical changes (Bollen & Cohen, 2004).

The unclear picture whether SRI leads to an increase or decrease in market value may stem from Financial Social Responsibility measurement deficiencies ranging from intangible and time-inconsistent pay-offs. SRI studies are methodologically limited by small sample sizes due to the relative novelty of Financial Social Responsibility, inconsistencies in the short timeframes under scrutiny and differing modeling techniques used to estimate investment returns (Jones et al., 2008; McWilliams & Siegel, 1996; Mohr et al., 2001; Ngassam, 1992; Teoh, Welch, & Wazzan, 1999). Most SRI studies do not take externalities on the wider constituency group into consideration, which lowers the external validity of the results and calls for a more whole-rounded examination of SRI (McWilliams et al., 1999).

When widening the interdisciplinary lens for SRI motives, it becomes apparent that socio-psychological motives of socially conscientious investors have not been studied sufficiently. Apart from the intention to maximize profits, the following framework proposes socio-psychological mechanisms that may impact on financial social conscientiousness. Altruism as the concern for the societal well-being as well as the need for innovation and entrepreneurship are potential SRI triggers. Financial Social Responsibility may also grant strategic leadership advantages through social status elevation prospects and utility derived from transparency and information disclosure. SRI options may allow self-enhancement through identification and self-consistency and an expression of social values of future-oriented, long-term focused socially conscientious investors.

ALTRUISM AS THE CONCERN FOR THE SOCIETAL WELL-BEING

A mixture of egoistic and altruistic acts constitutes human behavior as both are features of human nature (Becker, 1976). The duality of altruism and egoism in human behavior is addressed as early as in ancient Greek

writings. Already Socrates connected egoistic individual responsibility to altruism (Weber, Pasqualoni, & Burtscher, 2004). The altruism versus egoism predicament is also captured by Adam Smith (Beinhocker, 2007). In *An Inquiry into the Nature and Causes of the Wealth of the Nations*, Smith (1776/1976) proposes self-interest as the motivating force for all economic activity to cumulatively enhance societal well-being (Jones & Pollitt, 1998). In *The Theory of Moral Sentiments*, Smith (1759/1976) argues all human beings being selflessly interested in the well-being of others as for altruistic moral sentiments (Zak, 2008).

Altruism is captured as a state, by which individuals increase the fitness of others at the expense of their own (Wilson, 1975). As a source of value for those who give, altruism is associated with selfish pleasure (Brooks, 2008). Short-term intangible gratification of altruism is related to the warm glow – an internally rewarding positive feeling derived from the giver being conscientious of their pro-social behavior (Brammer, Williams, & Zinkin, 2005; Frey & Stutzer, 2007; Heyman & Ariely, 2004). Granting meaning to the individual beyond the self, altruism contributes to the positive self-perception and well-being of the giver. As one of the most enduring human traits, altruism is evolutionary explained by the increased survival likelihood of those who are supported by others and dominance of supportive networks (Becker, 1976).

Today classic market fundamentalism is challenged by findings of the importance of altruism in decision making (Osnabrugge & Robinson, 2000). Contrary to classical economic assumptions of pure self-interest driving all human action, behavioral economist find altruism as a part of economic decision making in experiments (Frank, 2007). Behavioral economics introduce altruism and pro-social behavior in financial decision-making analyses. Challenging classic portfolio theory that holds investments being purely based on rationality, business ethics describe affluent societies to exhibit altruism in investment choices deviating from pure profit maximization (Becker, 2008; Brooks, 2008; Frey & Stutzer, 2007). Economic psychology finds altruism as a pivotal motivation factor for investment allocations as investors exhibit pro-social concerns (Brooks, 2008; Csikszentmihalyi, 2003; Kirchler, 2001). Market behavior is captured to serve pro-social, altruistic endeavors. As socially conscientious investors are found to be willing to sacrifice profits for the sake of altruism, SRI is portrayed as an investment strategy that combines profit intentions with social considerations (Little, 2008). Within society, altruism breeds cooperation and creates long-term beneficial societal ties. Altruism contributes to collective trust and social capital as implicit prerequisites for any economic market activity and societal prosperity (Brooks, 2005; Frey, 2008).

Extended investors' altruism is expressed in investor philanthropy, which stems from a combination of tax exemptions for charity but also utility decline of marginal profits leading to a search for warm glow in giving beyond personal profit maximization (Holman, New, & Singer, 1985). Investor philanthropy is most common in the United States due to a combination of financial wealth accumulation, cultural values of giving and tax exemptions for charity. Prominent US investor philanthropists are Warren Buffett – who recently donated over 85 percent of his fortune to charity – and George Soros, who couples economic investments with philanthropy by leading the Soros Fund Management alongside the nonprofit Open Society Institute and Soros Foundation (Bernstein & Swan, 2007; Soros, 1997, 2003).

NEED FOR INNOVATION AND ENTREPRENEURSHIP

Innovations are as old as mankind. Since industrialization entrepreneurial activities and innovations are the mainspring of societal progress and economic prosperity (Drucker, 1985; Schumpeter, 1951/1989). Already Karl Marx described the constant diffusion of innovations driving capitalism. Schumpeter (1934, 1951/1989) refined the idea of profit stemming from innovations. Entrepreneurs were captured to uniquely combine means of production to generate new products for innovation-seeking consumers. By efficiently using resources in an unprecedented, productive way, entrepreneurs spur innovative change. Entrepreneurial innovations drive productivity, create and extend markets and steer economic development in open market societies (Handy, 2006).

Entrepreneurs are in need of a supportive environment and advantageous societal settings that support their endeavors. While entrepreneurial activities are reported in various historical contexts and exist in almost all cultures, their degree of success depends on external, culture-related factors of institutional and regulatory frameworks, investment capital and societal values (Brooks, 2008; De Woot, 2005). As incubators for entrepreneurship, innovative milieus attract entrepreneurs and prosper innovations (Aydalot & Keeble, 1988). Libertarian, open market societies breed innovation by economic freedom, investment capital, private property securitization, and social capital (Camagni, 1991; Fromhold-Eisebith, 2004; Rodrik, 2007). In innovative milieus knowledge dissemination in sync with collective learning processes and expertise platforms stimulate entrepreneurial activities.

While innovations flourish best in regulatory leeway, the 2008/2009 World Financial Crisis has drawn attention to an additional essential feature

for the long-term success of entrepreneurial innovations in free-market hubs – social responsibility. The 2008 World financial meltdown underlined that creative entrepreneurs featuring dynamic energy, an extraordinary striving for innovative progress, and high levels of risk acceptance can impose emergent and systemic risks to unregulated markets (Drucker, 1985; Goleman, 2006; Kirchler, 2001). While unregulated markets are essential for fostering an innovative climate, the past 2008/2009 regulatory watchful eye over the market place has created an "Age of Angst" featuring constraint liquidity and corporate capital hoarding that may only be overcome by renewed attention to the importance of risky entrepreneurs driving innovation, yet who are also socially conscientious allowing free-market innovations to prosper sustainably. Social responsibility as an essential safety protection beyond legal regulation ensures correct performance of contracts coupled with additional conscientiousness for social needs. In these functions, Financial Social Responsibility serves societal goals beyond the regulatory control.

Within financial market in particular, SRI is an innovative and entrepreneurial investment option that allows sustainable free-market economic growth protected by a personal social responsibility taming personal excesses that can impose potential risks onto the economy (Waldman et al., 2004). As a means of stakeholder activism, SRI allows investors to reward societal progress and innovatively tackle social and environmental concerns. Especially positively screened SRI funds feature innovative corporations that pro-actively administer social responsibility beyond the legal requirements (Aiken & Hage, 1971; Little, 2008). Positively screened environmentally friendly corporations contribute to future-oriented funds that attract innovative and entrepreneurial investors (Blank & Carty, 2002; Coulson, 2002; Meyers & Nakamura, 1980; Russo & Fouts, 1997; Ziegler, Rennings, & Schröder, 2002). In shareholder advocacy, SRI becomes a means to address social concerns (Little, 2008).

As an innovative capital allocation form for entrepreneurial spirits, SRI is preferred by venture capitalists and business angel investors. These future-oriented investors have an interest in innovative market options that steer societal change and sustainably improve societal conditions (Schueth, 2003). Social venture capitalists are prone to screen financial options for entrepreneurial opportunities. Venture capitalists seek to finance social entrepreneurs and early-stage businesses innovations. Venture funds feature relatively high risk in combination with extraordinary return expectations. Apart from high growth outlooks, venture capital funds serve as a source for innovative economic growth and international development within society (Gompers, Kovner, Lerner, & Scharfstein, 2005).

Business angel investors are the oldest and most influential external entrepreneurial start-up funding source. In the United States close to three million business angles invest more than US$ 50 billion in entrepreneurial corporations per year (Little, 2008). Business angels fund 30–40 times as many entrepreneurial start-ups than venture capitalists (Little, 2008). As innovative investors, business angels are attracted to entrepreneurial ideas, willing to take high risks and accept lower returns. Angel investors primarily finance early-stage projects that may require hands-on managerial involvement. As for interests in start-up corporations and early-stage ventures, business angels are less likely to make follow-up investments in the same entities. In the United States individual angel investors are predominantly male, 35–40 years old – which is significantly older than the average venture capitalist – while their European counterparts are slightly older (Wetzel & Freear, 1996). Business angels are well-educated with 60 percent holding postgraduate degrees and 13 percent PhDs in various disciplines. Having more corporate exposure than venture capitalists, around 90 percent of business angels have prior corporate experience. Business angels tend to be more flexible than venture capitalists and make industry-wide investments. In recent decades, the overall market for business angels has grown quantitatively and qualitatively in the Western World.

STRATEGIC LEADERSHIP ADVANTAGES THROUGH SOCIAL STATUS ELEVATION

Social status is as old as mankind. Already ancient sources attribute rights and allocate assets based on status (DiTella, Haisken-DeNew, & MacCulloch, 2001). All cultures feature some form of social status displayed in commonly shared symbols. Social status attributions posit people in relation to each other in society based on individual characteristics but also group membership (Ball & Eckel, 1996; Hong & Bohnet, 2004; Huberman, Loch, & Önçüler, 2004; Loch, Huberman, & Stout, 2000; Ridgeway & Walker, 1995). Social status can be ascribed or achieved. Ascribed status – such as gender or race – is determined by birth. Achieved status is acquired throughout life by, for instance, education or occupation.

As ascribed status can be improved throughout life, relative status positions are assigned in zero-sum games – thus one individual's status gain lowers another ones' status. Individuals implicitly weigh their social status based in the number of contestants in ranks above and below them

(DiTella, Haisken-De New, & MacCulloch, 2001). In societal hierarchies, status is related to a diverse set of opportunities. Different rules and availability of resources apply to variant social status positions (Young, 2011).

As an intrinsic fundamental human characteristic, people are concerned about their social status in relevant domains, leveraging social status striving into a pivotal motivation factor in human live (Coleman, 1990; Duesenberry, 1949; Friedman, 1953; Friedman & Savage, 1948; Mazur & Lamb, 1980; Ridgeway & Walker, 1995; Veblen, 1899/1994; Weber, 1978). Social status impacts on an individual's social identity and emotional state (Postlewaite, 1998). Status gains and superiority are associated with positive emotions and well-being derived from positive interaction (Bird, 2004; Brown, Gardner, Oswald, & Qian, 2004; Galiani & Weinschelbaum, 2007; Hong & Bohnet, 2004). Individuals gain psychological satisfaction from being better off than others and feel uneasy when they see others doing better (Easterlin, 1974; Hopkins & Kornienko, 2004). Status losses evoke risk aversion and embarrassment driving a desire to enhance one's self-image to overcome unhappiness (DiTella et al., 2001; Harbaugh, 2006).

Status concern is evolutionary explained by an interest to win contests (Raleigh, McGuire, Brammer, Pollack, & Yuwiler, 1991). The human-innate striving for status superiority even holds for collectives (Frank, 1985; Frey & Stutzer, 2002; Keltner, Gruenfeld, & Anderson, 2003; Layard, 2005; Wichardt, 2008). In the social compound, we favor positive status superiority of our groups compared to groups one does not belong to (Tajfel, 1978; Tajfel & Turner, 1986). Social opportunities are based on favorable group membership (Meeker & Weitzel-O'Neill, 1977; Ridgeway, Berger, & Smith, 1985). Group members with high status have more control (Bales, 1951; Berger & Zelditch, 1985), receive more credit for success (Fan & Gruenfeld, 1998), and enjoy higher degrees of well-being (Adler, Epel, Castellazzo, & Ickovics, 2000). In contrast, low status group members are more likely to be neglected (Chance, 1967; Savin-Williams, 1979), more often blamed for failures (Weisband, Schneider, & Connolly, 1995), and feel more negatively (Mazur, 1973; Tiedens, 2000).

Social status superiority is favorable as for attached rights, honors, and prestige (Berger, Fisek, Norman, & Zelditch, 1977; Cole, Mailath, & Postlewaite, 1992; Huberman et al., 2004; Postlewaite, 1998). Already Smith (1759/1976) related social status advantages to consumption opportunities (Roussanov, 2009). Sociologists depict the economic utility of status expression through conspicuous consumption (Bolton & Ockenfels, 2000; Coelho & McClure, 1993; Congleton, 1989; Galiani & Weinschelbaum, 2007; Hopkins & Kornienko, 2004; Kahneman & Thaler, 1991; Konrad & Lommerud, 1993; Veblen, 1899/1994).

Leaders express and distinguish themselves from others by their possessions and social empathy. Sociologists outline conspicuous consumption as a leadership distinction (Coleman, 1990; Veblen, 1899/1994). Leaders are willing to pay premium prices for trademarked high-end goods and innovative first editions to differentiate themselves from others (Becker & Murphy, 2000). In addition, pro-social giving grants leaders control over their social environment and discourages others from causing harm to givers. In pro-social activities, leaders thereby create strong interpersonal networks that lift their position in hierarchies (Brooks, 2008).

SRI implies social status-enhancing leadership advantages for investors, when being perceived as innovative market option that allows investors to distinguish themselves from others and establish and maintain leadership positions through pro-social outcomes. As an innovative entrepreneurial financial market option, SRI implies first-mover advantages as a competitive edge. The extra-step of screenings leverages SRI into high-end, branded products. Positive image transfer portrays socially responsible investors as pro-social leaders (Ait-Sahalia, 2004).

Related to advantageous power and wealth distributions, leaders are in the position to give to others and those who give distinguish themselves as leaders. Altruistic social responsibility and charitable giving thus imply additional leadership advantages. Pro-social behavior of leaders is accompanied by positive feedback and a benevolent climate of their admirers (Brooks, 2008). As altruism contributes to the social reputation of the altruist, social responsibility enhances the social status of leaders (Becker, 1976; Brooks, 2008; Hermann, 2008; Weber et al., 2004). Pro-social behavior thereby grows into value for those who give and leads to higher personal standing and status, leadership effectiveness and ultimately greater success. For their charitable giving, socially responsible investors enjoy a positive reputation and social status advantages (Ait-Sahalia, 2004; Wright & Ferris, 1997).

SRI offers potential implicit or explicit strategies to express and enhance social status in the social arena. Based on Maslow's (1943) hierarchy of needs, one can only be Überethical if having reached a certain social status. Not having to worry about food and shelter, frees mental capacities to address higher societal, ethical needs and future-orientedly filling current legal gaps. As ethicality is perceived as noble act that grants others' respect, individuals may use SRI as a conspicuous social status symbol in the social compound. Beyond governmental regulation and legal obligations, the nobleness of Überethical SRI may thus bestow individuals with social status elevation prospects.

SRI serving a need for ethicality captures when human are overdoing what is required by the law. In the natural human drive to do good to others, human are outperforming legal regulation whilst incurring costs and impose risks onto themselves. Similar to Zimbardo's heroic imagination (2011a, 2011b) describing the voluntary service to others that involves a risk to physical comfort, social stature, or quality of life, this kind of Überethicality stems from the voluntarily filling of legal gaps or outperforming legal goals that impose costs and risks onto the individual. In closing current legal gaps, the evolutionary-based natural law of Überethicality is forerunning legal codifications if considering laws to be the expression of our shared nature and amalgamated sum of social norms in society (Cicero in Keyes, 1966; Cope, in speech, 2011). Socially responsible investors foresightedly fulfill future regulatory requirements, which grants first-mover leadership advantage (Young, 2011).

Given the natural respect for the voluntary willingness to incur risks for the sake of pro bono-outcomes as well as leadership advantages attributed to pro-actively tackling ethical problems that will likely cover future regulation, SRI is thus an implicit social status elevation means. Under the assumption that individual's self-esteem being dependent on social status and human constantly wishing to maintain or gain positive social status, Überethical SRI choices can thus serve as a powerful social status pedestal to claim or regain social status in the aftermath of the 2008/2009 World Financial Crisis.

UTILITY DERIVED FROM TRANSPARENCY AND INFORMATION DISCLOSURE

When consumers chose, they seek information about products and corporate performance to diminish uncertainty in purchase situations. Transparency of corporation conduct impacts on consumption choices. Like consumer choices, investment decisions depend on information about corporate conduct as a prerequisite for investors' trust. As for lowered stakeholder pressure and litigation risks, CSR information impacts on investors' behavior (Gill, 2001; Myers, 1984; Siegel & Vitaliano, 2006; Williams, 2005). Investors' access to information about CSR is a prerequisite for SRI (Crane & Livesey, 2002; Little, 2008; Mohr et al., 2001). Shareholders react positively to governmental transparency demands of CSR conduct and a lack of information on CSR makes investors refrain from SRI options (Cuesta de la & Valor, 2007;

Williams, 2005). Publicity disclosed unethical corporate behavior leads to divestment and lowered stock prices for a minimum of six months (Dasgupta, Laplante, & Mamingi, 1998).

The basis for shareholder activism is transparency and information disclosure, monitoring of corporate conduct, accountability of the implementation of corporate codes of social conduct as well as internal and external CSR oversight. In the search for trustworthy information on CSR and corporate conduct externalities, socially conscientious investors primarily use corporate track records and shareholder resolutions on social and environmental performances (Graves, Rehbeim, & Waddock, 2001; Little, 2008). Access to CSR information is formally granted through fiduciary obligations and spearheaded by respective security and transparency legislations (Bazerman & Tenbrunsel, 2011). In the largest SRI market, fiduciary responsibility to a variety of stakeholders is attributed by the US Statement of Investment Principles (Goodpaster & Matthews, 2003). Since the 2000, trustees have been required to disclose – as a part of their Statement of Investment Principles – the extent to which social, environmental, or ethical considerations are taken into account in the selection, retention, and realization of investments. This measure was introduced to encourage socially responsible investments in pension funds (Hennigfeld, Pohl, & Tolhurst, 2006). SRI selections are also influenced by information-sharing networks, word-of-mouth, and emotional display (Thaler & Sunstein, 2008).

In the global arena, international organizations play a key role in defining transparency of SRI practices (Matten & Crane, 2005). From a global governance perspective, transnational entities are pivotal in institutionally supporting Financial Social Responsibility and streamlining SRI practices around the globe (Matten & Moon, 2004). International organizations define SRI standards and guideline the Financial Social Responsibility implementation in order to foster financial markets' global governance impetus on international development goals.

An instrument of CSR transparency is the United Nations Global Compact, which helps moving toward a universal consensus on the minimum standards of corporate social conduct in the areas of labor standards, human rights, poverty reduction, health and workplace safety, education and community engagement. The participation of corporations in the UNGC is foremost ensured through multi-stakeholder partnerships that target at leveraging the quality of corporate commitment to UN principles. The partnerships integrate CSR into corporate practices at the operational level throughout all hierarchical layers. The UNGC participants are advised to change corporate policies in sync with the Ten Principles.

Another effort targeted at ingraining CSR information into everyday investment decision making are the Principles for Responsible Investment (PRI). The United Nations Global Compact and the United Nations Environment Programme Finance Initiative launched the PRI at the New York Stock Exchange to ingrain social responsibility in asset owners and financial managers' investment decisions in April 2006. This public-private-partnership initiative was set up to increase the number of socially responsible investors and steer SRI by creating models for positive change within the investment community. The PRI are supported by the UNGC Conference Board, the chief executive officers of 20 global corporations, the International Finance Corporation of the World Bank Group, the Swiss Government, Columbia University and the UNEP Finance Initiative. Under the auspice of the UNGC and the UNEP Finance Initiative, the PRI invite institutional investors to consider SRI and mobilize chief executives of the world's largest pension funds to advance SRI on a global scale. The principles are designed to place Financial Social Responsibility into the core of financial managers and asset owners' investment decision making regarding pension funds, foundation assets and institutional endowments. At the one-year anniversary of the PRI, more than 170 institutions representing approximately US$ eight trillion in assets had committed to the PRI. Corporations that join the PRI report concomitant tangible (profit gain, efficiency, product innovations, market segmentation) and intangible (reputation, employee morale) benefits.

In February 2008 the UN Conference on Trade and Development (UNCTAD) launched the "Responsible Investment in Emerging Markets" initiative at the Geneva PRI office. This PPP targets at fostering transparency and disclosure of emerging financial markets. The key constituents are stock exchange and financial analyst communities as future SRI drivers to support the UNGC goals. In addition, NGOs are invited to advance financial market transparency and accountability (Roberts, 2006).

In the wake of the 2008/2009 World Financial Crisis, corporate governance failures and responsibility deficiencies of market actors have pushed stakeholder calls for transparency of corporate conduct, accountability of shareholder meetings, standardized tracking of proxy voting, and accessibility of shareholder meetings (Gärling, Kirchler, Lewis, & Van Raaij, 2010). As a positive externality of the financial crisis, the drive toward transparency and accountability within financial markets is likely to foster SRI in the future. Access to information is believed to lower economic default risks of socially irresponsible corporate conduct and contribute to uprising SRI trends.

SELF-ENHANCEMENT THROUGH IDENTIFICATION AND SELF-CONSISTENCY

While socially responsible investors are interested in financial profitability, at the same time they want their portfolio choice to conform with their personal opinions and societal norms (Little, 2008; Statman, 2007; Williams, 2005). Socially responsible investors are willing to sacrifice financial returns for aligning their investment allocations with personal and societal values (Statman, 2008). Financial Social Responsibility allows investors to attribute causes that are in line with their beliefs and societal values. As a means to integrate ethicality in economic decision making, SRI enables investors to address social norms that may resonate with their personal values (Knoll, 2008). SRI thereby serves intrinsic obligations to uphold protected values of morality (Alperson, Tepper-Marlin, Schorsch, & Wil, 1991; Frey & Irle, 2002; Sparkes & Cowton, 2004). When paying attention to protected values, decision makers depart from rationality (Bazerman & Moore, 2008). Socially responsible investors fund ethical causes about which they personally care and refrain from ethical infringements. These protected values of ethicality are relatively stable across cultures and the drive toward social responsibility in investment decisions a natural behavioral law (Baron & Spranca, 1997; Puaschunder, 2011).

The integration of personal ethics in their portfolio decision making and the perception of the investment decisions being in sync with personal protected values let investors identifying with their choice (Mohr & Webb, 2005). The alignment of beliefs and actions evokes identification with investments that grants investors the notion of self-consistency. Self-consistency contributes to the self-enhancement of socially responsible investors (Frey & Irle, 2002; Schueth, 2003).

Emotions related to protected values may play a key role. Emotionality makes individuals resistant to economic utility considerations. Honing social values with investments triggers positive feelings related to solidarity on common goals. Groups bestow with self-worth elevating pride when members are complying with socially favorable goals and shame arises when individuals act socially irresponsible. Fear of social status losses breaks unfavorable anti-social habits. Forced trade-offs from deontological ethics result in resistance, anger, and denial by wishful thinking. By serving a positive self-reaffirmation of investors and granting a favorable mood of investors, SRI contributes to a benevolent climate between the finance community and real economy actors.

EXPRESSION OF SOCIAL VALUES

Everyday economic decisions are influenced by social considerations. Social motives also underlie financial decision making (Frey & Stutzer, 2007; Hong & Kacperczyk, 2006). Social norms are a prerequisite for Financial Social Responsibility. In particular, SRI enables investors to align personal economic endeavors with social obligations and express their social conscientiousness to others (Hitsch, Hortaçsu, & Ariely, 2005).

Socially responsible economic activities can leverage into a form of expression of social conformity (Soros, 1995; Statman, 2000). When paying attention to SRI in their decision making, investors can express of social conformity (Sichler, 2006). SRI signals attention to culturally endorsed social values that help connect investors with social reference groups. SRI thereby expresses accordance of personal values with societal norms of the wider society. The expression of personal values in SRI is attributed to stem from an internal need for conformity of words and deeds with social norms and societal values (Hofmann, Hoelzl, & Kirchler, 2008). Individuals who care about their pro-social images signal their conformity with societal norms in socially responsible investment choices (Huberman et al., 2004).

The accordance of market interactions with social norms expresses positive, meaningful social identities. Stemming from the positive image of socially responsible corporations and the social gratification of pro-social behavior, socially responsible investors benefit from reputation and prestige gains (Derwall & Koedijk, 2006; Hong & Kacperczyk, 2006; Schroeder, 2003; Simons, Powers, & Gunnemann, 1972; Stone et al., 2001; Webster, 1975). Expressing social norms in their investment behavior empowers socially responsible investors as for the social gratification of their pro-social choice. Socially conscientious financial decision making also grants influential expressive powers to change corporate policies and practices. SRI gives investors the right to vote at the shareholders' general assembly as well as the possibility to put forward resolutions on corporate governance. Shareholder advocacy influences corporate policies with positive societal implications (Mohr et al., 2001). As a positive externality, the expression of personal values in SRI positively contributes to the overall long-term societal progress.

LONG-TERM CONSIDERATIONS

Starting in the 1970s in the wake of shareholder activism, financial markets increasingly became attentive to socio-political circumstances over the last

decades. Concurrently diminishing power of nation states in a globalizing world shifted social responsibility onto the private sector (Ahmad, 2008; Puaschunder, 2010). Since the 1990s capitalism grew into the triumphing market system and an upcoming financial market dominance was forecast. In the wake of financial markets' worldwide outreach in socio-political affairs and rising levels of social venture capital in international development, Financial Social Responsibility increasingly advanced into a global governance means.

The 2008/2009 World Financial Crisis, however, put new perspectives on financial markets' global hegemony and sparkled societal interest in Financial Social Responsibility. In the aftermath of the 2008/2009 financial downturn due to short-termism, the call for sustainable financial markets built on lasting values and economic stability stemming from a long-term investment prospect has reached unprecedented momentum.

In general, investment decisions are based on reflections about future prospects. Investment strategies can build sustainable financial returns if considering lasting, long-term societal implications (Crowther & Rayman-Bacchus, 2004). Long-term viability of corporate conduct is ensured by CSR. Socially attentive corporate conduct features sustainability considerations of corporate executives who are mindful of future risks and social impacts of their decision making. CSR grants long-term stability of corporate conduct as for creating a supportive business environment and decreasing stakeholder pressure and litigations risks (Little, 2008; Posnikoff, 1997; Sparkes, 2002). As socially responsible corporate conduct attributes long-term perspectives, when taking rising CSR trends into consideration, SRI offers lasting financial prospects and impact on society (Dupré et al., 2008; Little, 2008; McWilliams et al., 1999). From a multi-stakeholder perspective, SRI implies long-term positive societal outcomes (Sparkes, 2002). SRI ensures that corporations are held accountable for any social and environmental impacts and investments are in line with societal values (Sparkes, 2002). By shifting capital from socially disapproved to socially conscientious corporations, SRI fosters corporate social performances. Investor interested in "social change" put their investments to work in ways that sustainably improve the overall quality of life. Socially conscientious investors thereby use SRI as a long-term strategy to contribute to society (Knoll, 2008; Schueth, 2003).

By offering long-term prospect, SRI also breeds economic stability and societal advancement. As for being incentivized by first-mover leadership advantages, more and more corporations may pay attention to social responsibility in the future. Accompanied by followers, the rising supply of SRI in combination with a heightened demand for the integration of

personal values and societal concerns into financial decision making may prospectively leverage social conscientiousness to become a standard feature of investment markets. On the long run, the integration of SRI into the overall competitive model will further sophisticate social responsibility in corporate conduct (Starr, 2008; Stiglitz, 2003). Financial market demand and supply geared toward SRI will qualitatively sophisticate the option range in a more socially responsible way. In addition if the majority of investors are socially conscientious, socially responsible corporations will continuously benefit from increasing investment streams. Directed capital flows to socially responsible market options will thereby sustainably contribute to CSR and SRI trends (Dupré et al., 2008). Overall, financial markets attuned to social responsibility will lift entire industries onto a more socially conscientious level (Trevino & Nelson, 2004). As such SRI is attributed the potential to positively impact on the financial markets and create socially attentive market systems that improve the overall standard of living and quality of life for this generation and the following.

DISCUSSION

The paper addressed potential Financial Social Responsibility drivers. Building a framework of socio-psychological SRI motives helped opening the black box of classic economic models to authentically capture investment decisions in order to foster the implementation of Financial Social Responsibility in the post-2008/2009 World Financial Crisis era.

After the steady rise of SRI in recent decades, stakeholder concerns for Financial Social Responsibility have reached unprecedented momentum in the wake of the 2008/2009 World Financial Crisis. In the aftermath of economic downturns, SRI appears as a window of opportunity for fostering social progress. As a consequence legislative reforms and governmental regulations currently promote transparent social responsibility in financial markets. Transparency and accountability of financial social market operations are believed to sophisticate SRI into a mainstream feature of financial decision making. As a crisis-robust market strategy, SRI offers to implicitly ensure security and sustainability of markets. SRI appears as a window of opportunity for implementing Financial Social Responsibility whilst re-establishing trust in financial markets.

Investigating socio-psychological motives of Financial Social Responsibility is meant to aid recommendations on how to integrate social responsibility in

financial markets and add information to overcome ambiguity of SRI in order to leverage SRI from a niche market solution to a state-of-the-art financial practice. In particular, the outlined socio-psychological motives may help providing information on SRI in order to advance the idea of Financial Social Responsibility. Overcoming a lack of information about socially conscientious financial practices can help building a shared understanding of social investment within the financial community. In line with the mere exposure effect, access to information on SRI fosters the integration of environmental and social governance in financial decision making (Frey & Irle, 2002). Information disclosure about the stability and effectiveness of SRI will help driving consumer confidence in markets. Outlining SRI as a market choice with several tangible and intangible utilities for investors will promote Financial Social Responsibility and stimulate the demand for SRI. The combined supply and demand increase will result in a quantitative and qualitative extension of SRI, which will further push the financial industry's efforts to innovate SRI. With the rising importance of transparent Financial Social Responsibility and financial institutions integrating social, environmental, and governance issues into investment analysis; social investment criteria will also become part of the fiduciary duty of trustees, financial advisers, asset managers, and intermediary institutions.

To strengthen these trends, financial institutions and experts are encouraged to consider environmental and social responsibility in a variety of ways. Information on CSR and SRI should become part of financial market operations. Media reports may inform asset managers and financial analysts about the link between CSR and SRI. Supervisory bodies could help promote the inclusion of SRI criteria in financial management. Accounting entities, rating agencies and index providers should adopt environmental and social governance standards as a basis for evaluation criteria that guarantee the concurrent financial and ethical performance. Stock exchange advisors can help by communicating listed corporations the importance of environmental and social responsibility governance. Asset managers should encourage brokers to conduct SRI screenings. Investors are recommended to request information on SRI and develop SRI proxy voting strategies. Pension fund trustees can help by considering environmental and social criteria in the formulation of investment mandates. Consultants and financial advisers should incorporate environmental and social corporate governance in their portfolio allocation strategies and accept social responsibility as a state-of-the-art of fiduciary obligations. Financial analysts will then assess market opportunities with respect for social contributions and actively participate in ongoing voluntary responsibility initiatives.

The SRI community must ensure that Financial Social Responsibility is constantly innovated. Analysts should assist policy makers in setting up an SRI framework that reflects practitioners' needs. Financial experts can sophisticate Financial Social Responsibility measurement models and contribute to research on environmental and social investments. Governmental assistance must contribute to the implementation and administration of CSR and SRI with attention to private sector and civil demands. As the basis for stakeholder engagement and monitoring, transparency and accountability are key for advancing corporate and financial social market behavior. Novel SRI options that fulfill unmet responsibility needs will open the market for socially responsible economic growth whilst bringing societal change.

The newly emerging CSR and SRI phenomena also open avenues for future research on social responsibility trends. Academic institutions should nurture the financial community's ethical sense. Business schools and think tanks could support SRI research and offer financial ethics education. Financial economists are advised to integrate socio-economic factors into standard economic profit maximization models. Concurrently behavioral economists should aim at explaining human decisions making fallibility on responsibility considerations and ethicality perceptions (Shu, Gino, & Bazerman, 2011a, 2011b).

Future research may study SRI in a qualitatively and quantitatively nested approach. Qualitative interviews on the social perception of SRI will help resolving societal losses imbued in the novelty of the phenomenon and aligning incoherent viewpoints on SRI. Exploratory studies may capture predicted SRI trends with attention to socio-economic success factors of Financial Social Responsibility and stakeholder-specific SRI nuances. Quantitative market assessments may feature the event study methodology as the state-of-the-art analysis technique for capturing the impact of SRI on corporate success. Financial market experiments may complementary test microeconomic effects of divestment behavior. Research on bounded decision making could reveal implicit and accidental financial social irresponsibility and may validate the proposed socio-psychological SRI framework to distinguish moderator variables of investors' willingness to trade off financial profits for social gratifications. The findings will reduce cognitive barriers of decision-making predicaments and lead to educative means for steering behavioral patterns in a more socially conscientious direction.

Additional investigations of the perception of SRI in the aftermath of the crisis could determine in what way the financial crisis has changed the financial community's view of market responsibility. Paying attention to the 2008/2009 World Financial Crisis may help deriving recommendations

for research-based transparency campaigns that promote SRI as a stable market option during times of crisis throughout the financial community and thereby raise the stakeholders' confidence in Financial Social Responsibility. The predicted trend of the rising of SRI should be captured by additional research on up-to-date corporate and Financial Social Responsibility conduct determining the strengths and weaknesses of private sector contributions to social welfare. All these profound research findings will serve as a basis for stimulating SRI innovations that lead to the concurrent economic prosperity and societal advancement.

Overall, the paper explored innovative corporate and financial market potentials to create value for society. A Financial Social Responsibility framework portrayed the manifold potentials of SRI to re-establish trust in financial markets by finding the optimum interplay of deregulated market systems and governmental control in ensuring market-driven social responsibility. The proposed socio-psychological SRI motives framework targeted at outlining ways how to better capture the effects of Financial Social Responsibility on economic markets and societal systems in order to provide recommendations for a successful rise of social responsibility within modern market economies. All these endeavors are aimed at fostering Financial Social Responsibility as a future guarantor of sustainable economic stability and societal progress throughout the world.

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INDEX